PHOTONICS SOLUTIONS
LASERS & DETECTORS covering UV to IR

PRECISELY DESIGNED
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FOR YOU
to be successful

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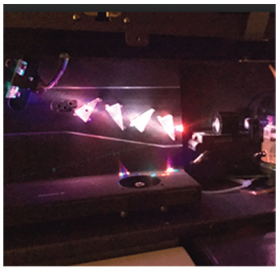
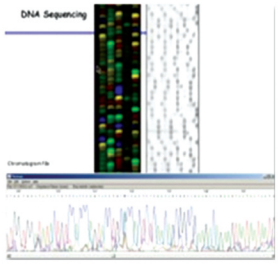


Flow Cytometry



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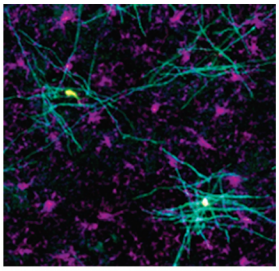

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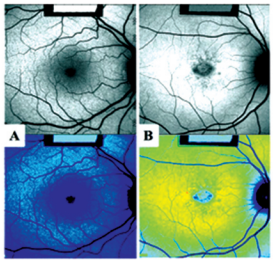

Ophthalmology

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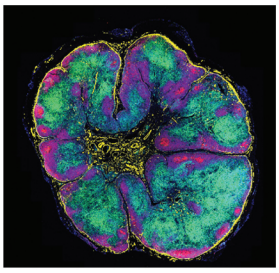
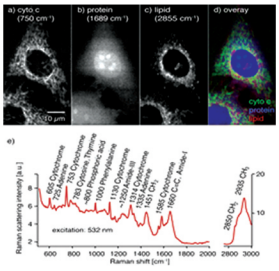
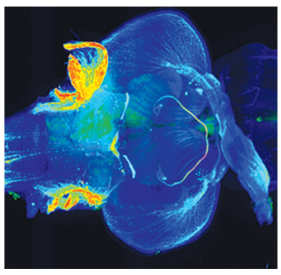


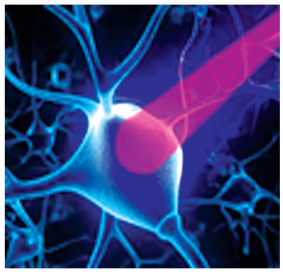
Spatial Genomics



Raman Spectroscopy



Lightsheet Imaging



Optogenetics

For Biomedical & Sensing Applications

WhisperIT PICel®

Blue-Green-Yellow green-Yellow Lasers

Solid-State Photonic Solutions for Biomedical Instrumentation

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WhisperIT PICel®

Blue-Green-Yellow green-Yellow Lasers

Based on PICel's Quantum well (QW) technology

WMP/WMN/WCP/WSL Series Continuous Wave B-G-Yg-Y Lasers

WMP	WMN	WCP	WSL
			
L*W*H: 52*27*13mm	**55*20*32mm**	**70*40*38mm**	**125*70*34mm**

- Blue 488nm, Green 532nm, 544nm,
- Yellow-green 553nm, 561nm
- Yellow 577nm, 580nm, 588nm, 594.5nm
- Ideal for replacing power hungry Argon and expensive DPSS lasers
- SLM TEM00 mode free space output
- Single mode fiber output available
- Regular output power available: 20, 50, 100, 200, 350mW
- High power output available: 500mW, 2W, 5W, 10W

WHP Series High Power B-G-Yg-Y Lasers

L*W*H: 130*52*34mm

- Blue 488nm, Green 532nm, 544nm,
- Yellow-green 553nm, 561nm
- Yellow 577nm, 580nm, 588nm, 594.5nm
- Ideal for replacing power hungry Argon and expensive DPSS lasers
- SLM TEM00 and high order MM available
- Ideal for coupling into multi-mode fibers
- Power: Available at various output power level, 500mW, 1W, 2W

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WhisperIT PICel®

CW Free Space and Fiber Coupled Single-Frequency Lasers (SF WSL Lasers)

The WSL-FS/FC series lasers offer robust packaging CW visible single-frequency lasers based on PICel's Quantum well technology. High reliability & consistent performance enables demanding biomedical and scientific instrumentation applications.

The WSL-FS/FC series lasers with a flexible interface: Analog or digital RS232.

The WSL-FS/FC series lasers are available with round beam and fiber coupled for applications that need narrow linewidth and are tailored to specific application requirements.

FEATURES

- **Ultra-narrow Noise**
- **Ultra-narrow Linewidth**
- **Superior Beam Quality**
- **Reliable and Robust**

APPLICATIONS

- **Flow Cytometry**
- **Confocal Imaging**
- **DNA Sequencing**
- **Spatial Genomics**
- **Protein Detection**
- **Raman Spectroscopy**
- **Interferometry**
- **Metrology**
- **Inspection**

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Table 1. Optical Specification

FREE SPACE SPECIFICATIONS	488	532	544	553	561	577	588	594.5
Wavelength (nm)	488	532	544	553	561	577	588	594.5
Wavelength Accuracy (nm)	±0.1							
Spatial Mode	Stable Single-longitudinal Mode							
Output Power (mW)*	20, 50, 80, 100, 150, 200, 350							
RMS Noise (20Hz to 2MHz) (%)	≤0.25							
Peak to Peak Noise (20Hz to 20kHz) (%)	<1							
Long-Term Power Stability (2hrs, ±3ºC) (%)	<2							
Beam Quality (M^2)	≤1.1							
Beam Symmetry	≤1:1.1							
Beam Diameter at $1/e^2$ (mm)	0.7±0.1							
Beam Divergence Angle (mrad, full angle)	<1.2	<1.3	<1.4					
Pointing Stability (µrad) (Over 2 hours after warm up and ±3°C)	<30							
Pointing Stability Over Temperature (µrad/°C)	<5							
Warm-up Time (From cold start) (minutes)	<5							
Polarization Extinction Ratio	>100:1							
Polarization Orientation (Reference to baseplate)	Vertical ±5º							

FIBER COUPLED SPECIFICATIONS	488	532	544	553	561	577	588	594.5
Wavelength (nm)	488	532	544	553	561	577	588	594.5
Wavelength Accuracy (nm)	±0.1							
Spatial Mode	Stable Single-longitudinal Mode							
Output Power (mW)*	20, 50, 80, 100, 150, 200							
RMS Noise (20Hz to 2MHz) (%)	≤0.25							
Peak to Peak Noise (20Hz to 20kHz) (%)	<1							
Long-Term Power Stability (2hrs, ±3ºC) (%)	<2							
Beam Quality (M^2)	≤1.1							
Beam Symmetry	≤1:1.1							
Fiber Type	PM							
Fiber Length (m)	1							
Fiber Connector	FC/APC							
Warm-up Time (From cold start) (minutes)	<5							
Polarization Extinction Ratio	>100:1							

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

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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)	125 x 70 x 34
Power Consumption (W)	≤12
Laser Head Baseplate Temperature (Max. ºC)	40
Heat Dissipation of Laser Head (W)	≤12
Operating Temperature (ºC)	10 to 50
Storage Temperature (ºC)	-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_12V	LD_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

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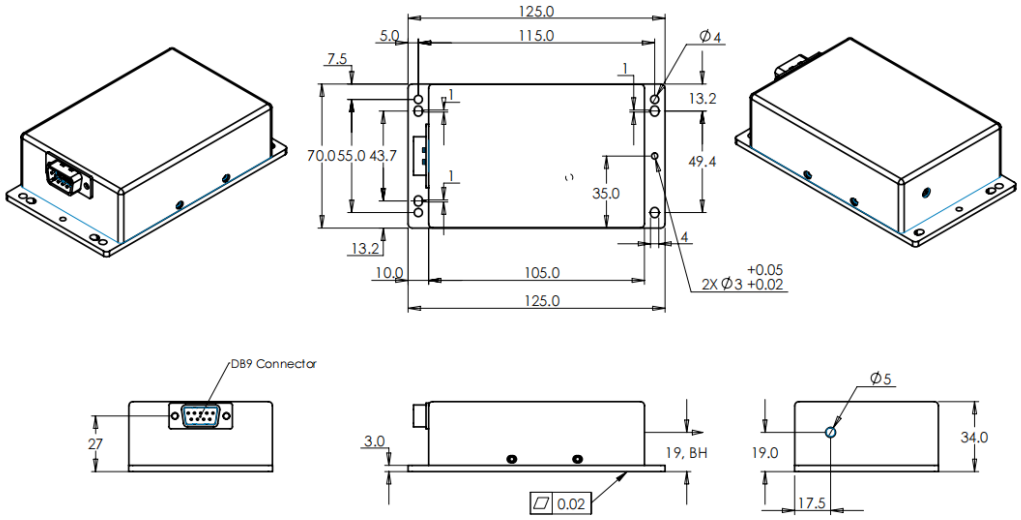
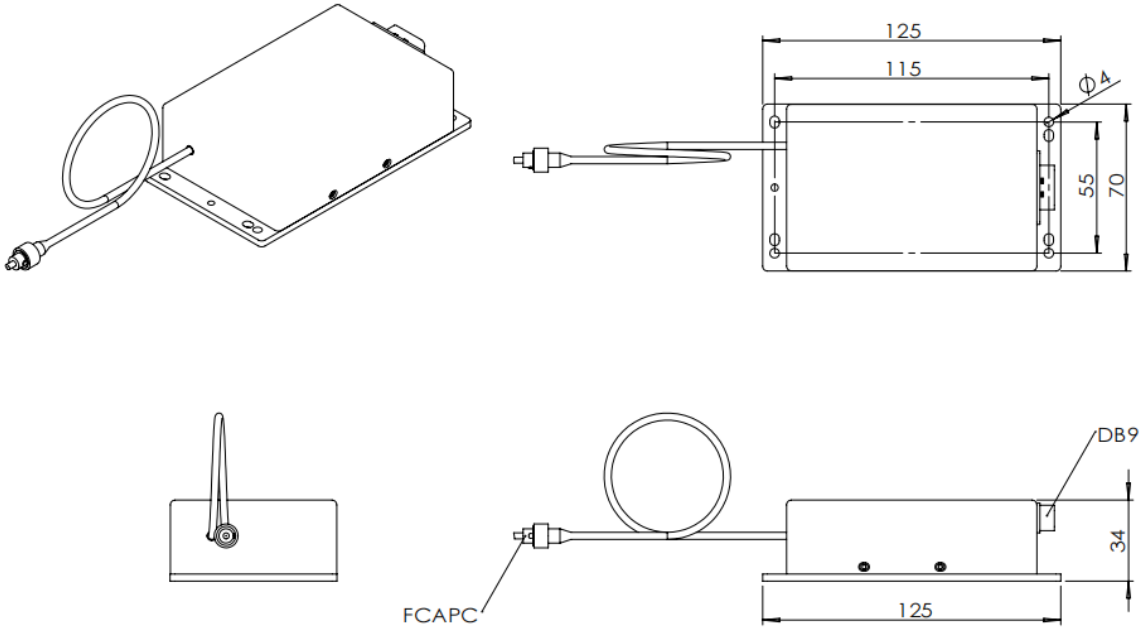
MECHANICAL SPECIFICATIONS



Free Space



Fiber coupled

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.

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WhisperIT PICel®

CW Free Space Single-Frequency Lasers (SF High power WSL Lasers)

The WSL-FS/FC series lasers offer robust packaging CW visible single-frequency lasers based on PICel's Quantum well (QW) technology. It utilizes most efficient heat removal technique by sandwiching the QW between two heat spreaders aka MECSEL. This result in a high reliability & consistent performance laser product which enables demanding biomedical and scientific instrumentation applications.

The WSL-FS/FC series lasers with a flexible interface: Analog or digital RS232.

The WSL-FS/FC series lasers are available with round beam and fiber coupled for applications that need narrow linewidth and are tailored to specific application requirements.

FEATURES

- **Ultra-narrow Noise**
- **Ultra-narrow Linewidth**
- **Superior Beam Quality**
- **Reliable and Robust**

APPLICATIONS

- **Flow Cytometry**
- **Confocal Imaging**
- **DNA Sequencing**
- **Spatial Genomics**
- **Protein Detection**
- **Raman Spectroscopy**
- **Interferometry**
- **Metrology**
- **Inspection**

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Table 1. Optical Specification

FREE SPACE SPECIFICATIONS	488	532	544	553	561	577	588	594.5
Wavelength (nm)	488	532	544	553	561	577	588	594.5
Wavelength Accuracy (nm)	±3							
Spatial Mode	Stable Single-longitudinal Mode							
Output Power (mW)*	500, 2000, 5000							
RMS Noise (20Hz to 2MHz) (%)	≤0.25							
Peak to Peak Noise (20Hz to 20kHz) (%)	<1							
Long-Term Power Stability (2hrs, ±3ºC) (%)	<2							
Beam Quality (M^2)	≤1.1							
Beam Symmetry	≤1:1.1							
Beam Diameter at $1/e^2$ (mm)	0.7±0.1							
Beam Divergence Angle (mrad, full angle)	<1.2	<1.3	<1.4					
Pointing Stability (µrad) (Over 2 hours after warm up and ±3°C)	<30							
Pointing Stability Over Temperature (µrad/°C)	<5							
Warm-up Time (From cold start) (minutes)	<5							
Polarization Extinction Ratio	>100:1							
Polarization Orientation (Reference to baseplate)	Vertical ±5º							

*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)	125 x 70 x 34
Power Consumption (W)	Varies at different output power
Laser Head Baseplate Temperature (Max. ºC)	40
Heat Dissipation of Laser Head (W)	≤12
Operating Temperature (ºC)	10 to 40
Storage Temperature (ºC)	-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

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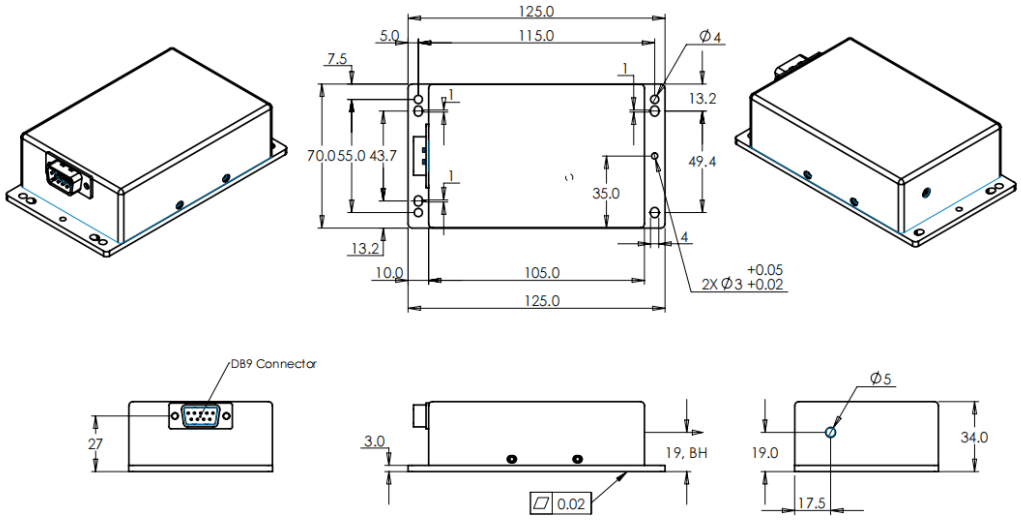
Table 3: Electrical Specification

DB9 Connector PIN Assignment	Digital Interface	Analog Interface
1	LD_12V	LD_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

MECHANICAL SPECIFICATIONS



ISO9001 & ISO13485 Registered

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WhisperIT PICel®
CW Multi-mode Free Space Lasers (WHP Series)

The WHP series lasers offer robust packaging CW visible lasers based on PICel's Quantum well (QW) technology, power up to 2W. It utilizes most efficient heat removal technique by sandwiching the QW between two heat spreaders aka MECSEL. This result in a high reliability & consistent performance laser product which enables demanding biomedical and scientific instrumentation applications.

The WHP series lasers with low noise and high stability, and with a flexible interface: Analog or digital RS232.

The WHP series lasers are available match for highest performance applications and are tailored to specific application requirements.

FEATURES

- **Ideal for replacing power hungry Argon and expensive DPSS lasers**
- **Ideal for coupling into multi-mode fibers**
- **Reliable and Robust**
- **Multi-mode power up to 2W**

APPLICATIONS

- **Flow Cytometry**
- **Confocal Imaging**
- **DNA Sequencing**
- **Spatial Genomics**
- **Protein Detection**
- **Raman Spectroscopy**
- **Interferometry**
- **Metrology**
- **Inspection**

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Table 1. Optical Specification

WHP FREE SPACE SPECIFICATIONS	488	532	544	553	561	577	588	594.5
Wavelength (nm)	488±3	532±3	544±3	553±3	561±3	577±3	588±3	594.5±3
Spatial Mode	Multi-mode							
Output Power (mW)*	500, 1000, 2000							
RMS Noise (20Hz to 2MHz) (%)	≤1							
Peak to Peak Noise (20Hz to 20kHz) (%)	<10							
Long-Term Power Stability (2hrs, ±3ºC) (%)	<2							
Beam Quality (M^2)	<7							
Beam Diameter	1.25							
Beam Divergence Angle (mrad, full angle)	<1.4							
Pointing Stability (µrad) (Over 2 hours after warm up and ±3°C)	<30							
Pointing Stability Over Temperature (µrad/°C)	<5							
Warm-up Time (From cold start) (minutes)	<5							
Polarization Extinction Ratio	>100:1							
Polarization Orientation (Reference to baseplate)	Vertical ±5º							

*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)	130 x 52 x 34
Power Consumption (W)	≤12
Laser Head Baseplate Temperature (Max. ºC)	40
Heat Dissipation of Laser Head (W)	≤12
Operating Temperature (ºC)	10 to 50
Storage Temperature (ºC)	-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

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Laser Safety Classification	3b

Table 3: Electrical Specification

DB9 Connector PIN Assignment	Digital Interface	Analog Interface
1	LD_12V	LD_12V
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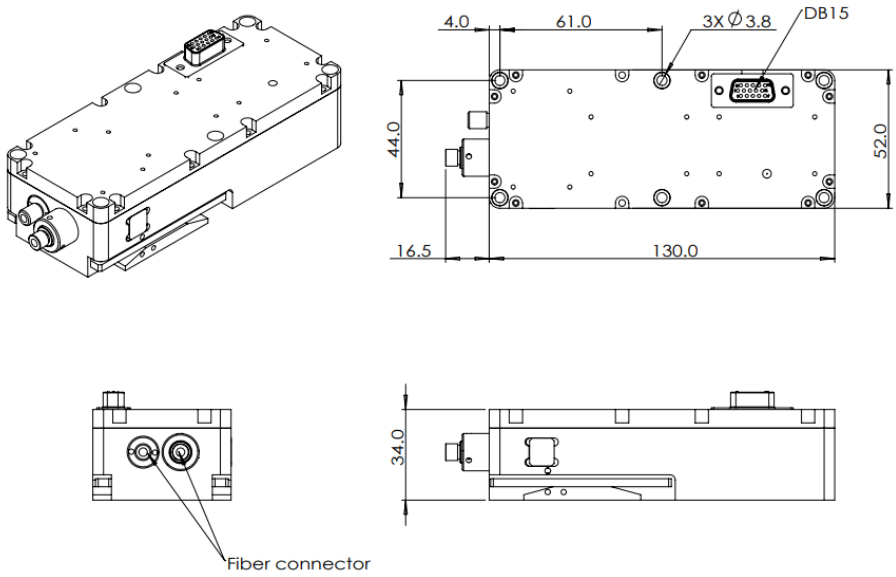
3	TEC_5V	TEC_5V
4	Tx for RS232	NC
5	TEC_GND	TEC_GND
6	NC	Power Adj
7	NC	Enable
8	GND for RS232	NC
9	LD_GND	LD_GND

MECHANICAL SPECIFICATIONS



ISO9001 & ISO13485 Registered

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