

Wavelength Swept Tunable Laser Fiber Coupled

(1528-1563 nm continuous scan range, 1MHz linewidth, SM, PM)



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The WSTL is a wavelength-swept laser source that delivers over 20 mW fiber output power while sweeping across the full C-band at speeds up to 100 nm/s. Its chip-level hybrid design integrates multiple discrete Bragg reflector sections for coarse tuning, a phase section for fine continuous tuning, and a semiconductor optical amplifier for power amplification and control, all within a compact butterfly package with no moving parts. A built-in shutter enables dark tuning under reverse bias, and an internal ITU-grid wavelength locker ensures wavelength and power stability through feedback to the SOA. The laser operates at a fixed temperature to eliminate thermal drift, achieving fast and precise tuning ideal for fiber-grating-based sensing systems due to its wide tuning range, narrow linewidth, and low cost. The WSTL is a plug-and-play unit with a dedicated driver providing variable power control and USB wavelength scanning, available either as a compact module with a wall-pluggable power supply or as a turn-key benchtop system delivering up to 200 mW optical output.

Features

- Wide Tuning Range
- SM and PM
- Narrow Linewidth
- Outstanding Power Stability
- 0.5W Power Output

Applications

- FBG based Sensing System
- Telecommunication
- Optical Device Characterization
- Metrology
- Sensor

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

Specifications

Parameter	Min	Typical	Max	Unit
Laser				
Optical Output Power	0	12	50	mw
Wavelength Range	1527.6		1565.5	nm
Frequency Accuracy	-1.5		1.5	GHz
Tuning Resolution		50		GHz
Sweeping Speed	1		100	ns/s
Fine Tuning Resolution	20	100	1000	KHz
Fine Tuning Speed		1		GHz/s
Fine Tuning Range	-30		30	GHz
Side Mode Suppression Ratio (SMSR)	40	55		dB
Optical Signal Noise Ratio (OSNR)	40	60		dB
Intrinsic Linewidth	1		100	MHz
Relative Intensity Noise (RIN)			-145	dB/Hz
Back Reflection			-14	dB
Polarization Extinction Ratio	18			dB
Power Monitors Accuracy		± 0.5		dBm
Power Monitors Resolution		0.05		dBm
VOA Response Time		1		s
Power Requirement	85–265 VAC (47–63 Hz)			
Power Consumption		4		W
Operating Temperature	10		40	°C
User Interface		USB		
Fiber Optic Connector		FC/APC		
Fiber Type		SM or PM		

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P +1 781-935-1200

E sales@photonwares.com

W www.agiltron.com

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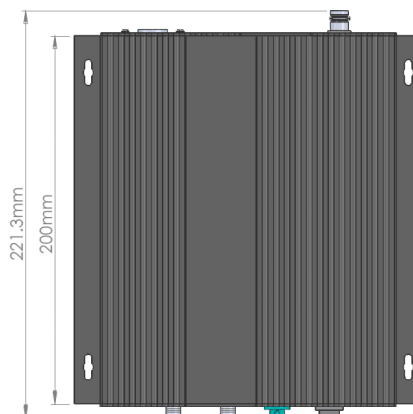
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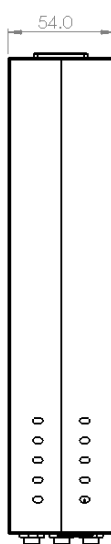
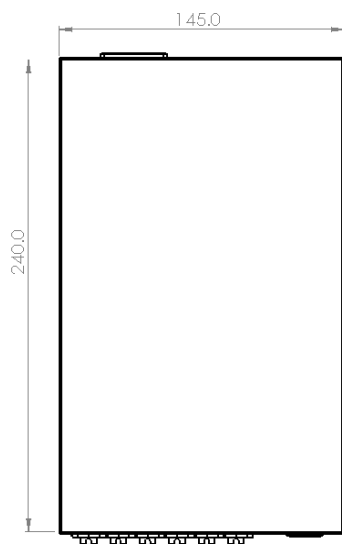


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Module (mm): Plug-Play (Power Supply Included)



Benchtop (mm): Plug-Play 100-240VAC, USB



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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Typical Spectrum

Ordering Information

	☐	C	☐	☐	☐	☐ ☐	☐
Prefix	Config	Wavelength	Linewidth	Power ^[1]	Package ^[2]	Output	Connector
WSTL-	Regular = 1 Special = 2	C-band = C	10MHz = 1	10mW = 1 50mW = 2 150mW = 3 500mW = 4 1W = 5	Module = 1 Benchtop = 2 Special = 0	SM28 = 11 PM1550 = 22	FC/APC = 1 Special = 0

[1]. > 10mW only available in benchtop package
[2]. Module output power 7-13dBm. Benchtop integrates VOA to adjust power fully.
Red is special order

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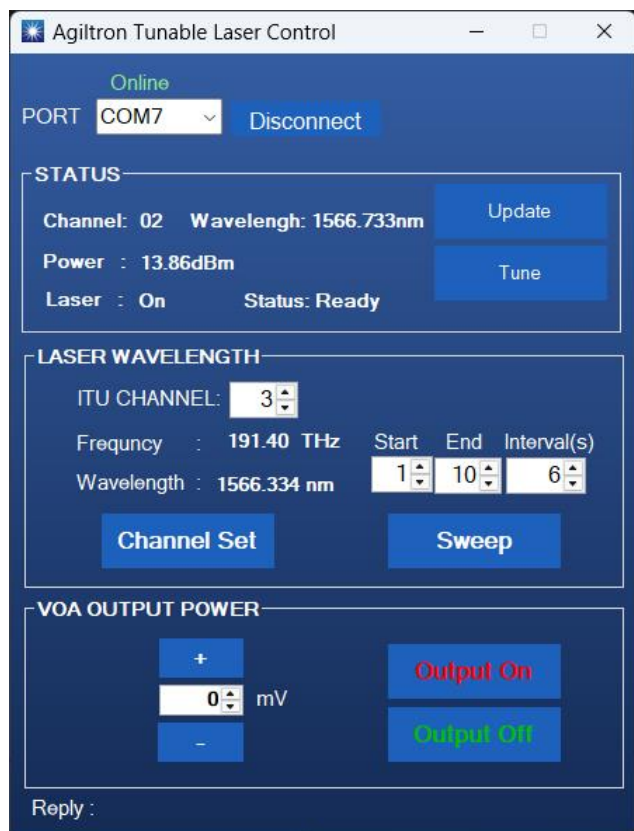
Operating On The Front Panel

There are 3 knobs on the front panel to operate laser source and control output power

- Wavelength knob: switch ITU channel.
- The channel number is unique to this instrument, actual frequencies specified by the ITU standard are displayed on screen. There are 96 channels.
For C-band, Wavelength Range: 1528 - 1566 nm or Frequency Range: 191.50 - 196.25 THz.
For L-band, Wavelength Range: 1570 - 1608 nm or Frequency Range: 186.35 - 190.95 THz
- To adjust the ITU channel, use the knob buttons to increment or decrement the channel.
- Power knob: adjusting and stabilizing the optical output power.
- The power range is 0-14.50 dBm or 0-28.18 mW.
- On/Off buttons: turn laser ON or OFF.
- While pressed, the power buttons turn green to indicate the function is ON, and turn off to indicate the function is disabled. Power On/Off status is also Indicated on screen.



GUI Instructions



The Gui has three main sections.

- The top side shows device status: channel number, power, laser on/off.
- The central section controls ITU channel and Sweep function. Scan is user adjustable by setting dwell time and wavelength tuning range.
- The bottom side sets Variable Optical Attenuator (VOA) voltage and turn On/Off laser output. The VOA provides the means for adjusting the optical output power.

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Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.

