ATLAS-1600 wavelength tunable laser

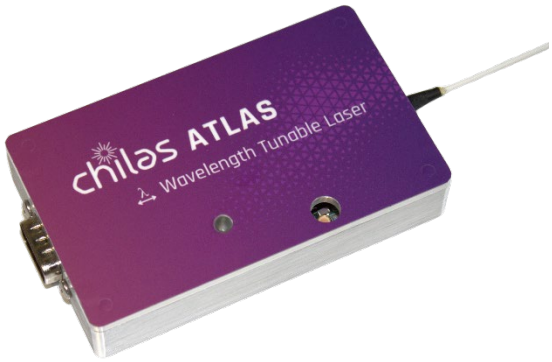
Key features

- ✓ Wide wavelength tunability ranging from 1540 nm – 1640 nm
- ✓ Center wavelength at 1590 nm
- ✓ Ultra narrow linewidth
- ✓ Low RIN
- ✓ Excellent SMSR
- ✓ Fully integrated with no moving parts, enabling switching between wavelengths instantly
- ✓ Excellent repeatability
- ✓ Software based wavelength calibration
- ✓ Easy to set-up and use
- ✓ Compact size

Applications

- ✓ Sensing such as biomedical, infrastructure and vibration
- ✓ Optical device testing
- ✓ Spectroscopy
- ✓ Coherent Communications

This component complies with the applicable portions of 21 CFR 1002.10 / 21 CRF 1002.11 / 21 CRF 1002.12 21 CRF 1002.13 / 21 CRF 1002.30a / 21 CRF 1002.30b 21 CRF 1040.10 / 21 CRF 1010.2 / 21 CRF 1010.3 Since this is a component, it does not comply with all the requirements contained in 21 CFR 1040.10 and 21 CFR 1040.11 for complete laser products.



Description

Chilas has developed a narrow linewidth tunable laser with a hybrid integrated external cavity. The ATLAS uses state-of-the-art Photonic Integrated Circuit (PIC) technology and has distinctive advantages of which the most important are: Ultra narrow linewidth, broadband tuning, and a small footprint/size.

The ATLAS consists of a butterfly packaged laser mounted inside a tuneable laser controller, and is provided with a calibration file and corresponding software. The controller incorporates a current driver, heater driver and temperature controller to set the laser. The controller takes care of an interface to a piece of software that allows the user to tune all the different parameters of the laser by an easy slider on the screen through a GUI. Additionally, an API serial command list will be provided.

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1. Performance and specifications

	Parameter	Specified values
Optical	Center wavelength	1590 ± 5 nm
	Wavelength range	100 nm
	Wavelength resolution	10 pm
	Wavelength accuracy	± 10 pm
	Tuning speed between wavelengths	200 µs
	Fiber output power	≥ 5 dBm
	Intrinsic linewidth	≤ 10 kHz
	Side-mode suppression ratio	≥ 50 dB
	RIN	≤ -145 dBc/Hz @ 1 MHz
	Frequency Modulation depth @ 10 kHz	≥ 1 GHz

	Parameter	Specified values
Package	Dimensions (LxWxH)	100*60*20 mm
	Weight	167 g
	Operating temperature	15 – 50 °C
	Power supply voltage	5 V_{DC}
	Power supply current	3.8 A
	Interface connector	DE-9
	Modulation/RF connecter	SMB
	Fiber type and connector	PM FC/APC

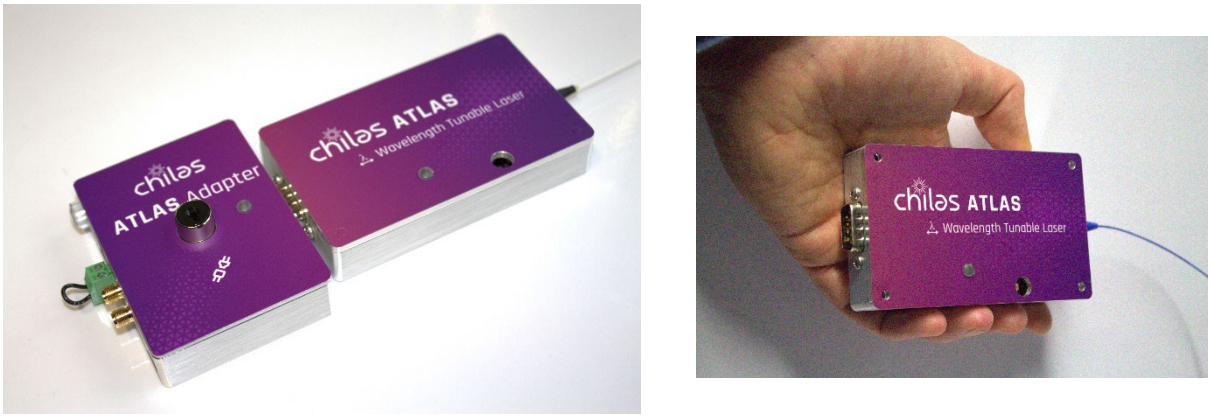

Figure 1 ATLAS with adapter for USB and power connection attached and an ATLAS in hand.

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2. Typical measurement results

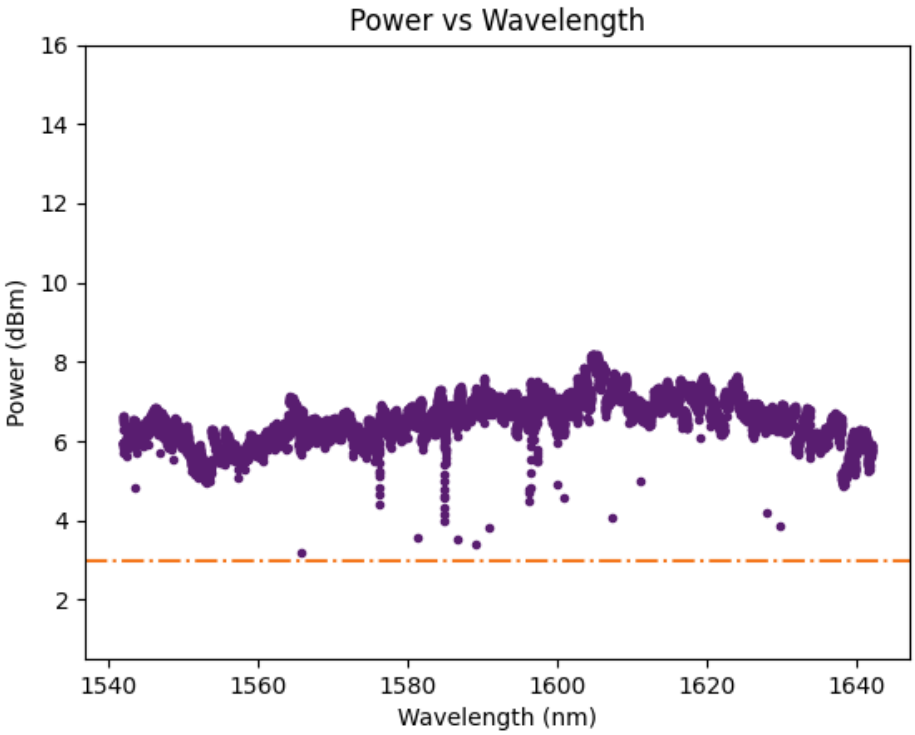

Figure 1 Tuning range covering 100 nm

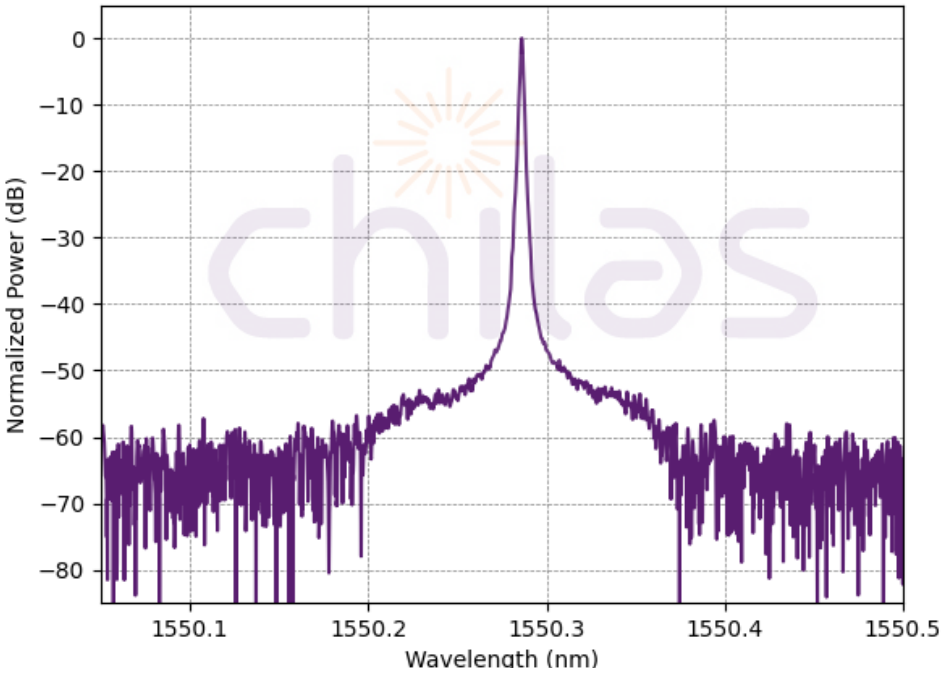

Figure 2 Measured side-mode suppression ratio of > 50 dB, representative for the full wavelength range .

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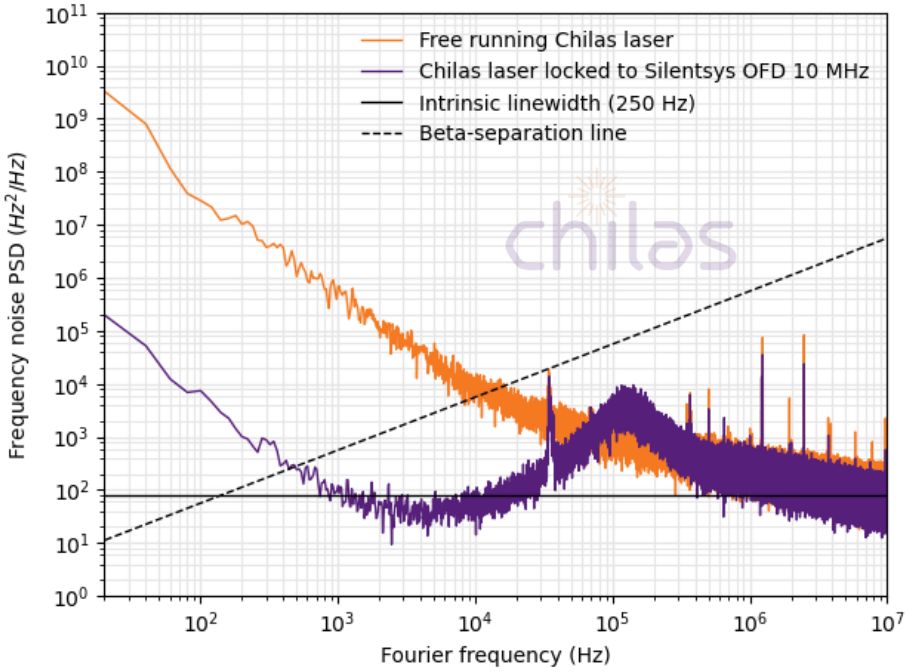

Figure 2 Phase noise measurement of a free running ATLAS and a locked ATLAS.

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