chilas

ATLAS 1550-50

ULTRA-NARROW LINEWIDTH
WAVELENGTH TUNABLE LASER SOURCE

DATASHEET



ATLAS 1550-50

ULTRA-NARROW LINEWIDTH WAVELENGTH TUNABLE LASER SOURCE



≤ 1 kHz linewidth **50 nm tuning range** **Fiber connected**

Applications

- Sensing
- Quantum Key Distribution
- Optical device testing
- Spectroscopy
- Coherent Communications
- Telecommunications

Key Features

- Wide wavelength tunability in C-band
- Ultra-narrow linewidth
- Low RIN
- Excellent SMSR
- Fully integrated with no moving parts, enabling switching between wavelengths instantly
- Excellent repeatability
- Wavelength control via software including GUI
- Easy to set-up and use
- Compact size

Laser Description

Chilas ATLAS uses state-of-the-art Photonics Integrated Circuit technology. The ATLAS module comprises a butterfly packaged laser and corresponding electronic controllers. The laser is a diode amplifier coupled to a silicon nitride waveguide circuit as a tunable external cavity. For tuning and control, drivers for laser current, temperature and heaters are all built into this compact module. The laser is calibrated for the specified wavelength range and delivered with a software graphical user interface (GUI). Additionally, a Python library can be provided.

Performance and specifications

OPTICAL

Parameter	Specified values
Wavelength range	50 nm
Wavelength resolution	10 pm
Wavelength accuracy	± 10 pm
Wavelength switching time	20 ms
Fiber output power at central wavelength	≥ 13 dBm / 20 mW
Fiber output power at full range	≥ 13 dBm / 20 mW
Intrinsic linewidth	≤ 1 kHz
Side-mode suppression ratio	≥ 50 dB
RIN	≤ -145 dBc/Hz at 1 MHz
Modulation bandwidth of diode current	500 kHz

PACKAGING

Parameter	Specified values
Dimensions (L x W x H)	100*60*20 mm
Weight	167 g
Operating temperature	15 – 50 °C
Power supply voltage	5 VDC
Power supply current	3.8 A
Interface connector	DE-9 or USB male
Modulation/RF connecter	SMB
Fiber type and connector	PM FC/APC

Optional add-on available on request: in-built isolator
The built-in isolator provides isolation of 30 dB at a 1550 +/- 20 nm bandwidth & 2 dB power decrease both at center wavelength and full range.

Laser Safety Information



This laser product complies with FDA performance standards 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Product pictures



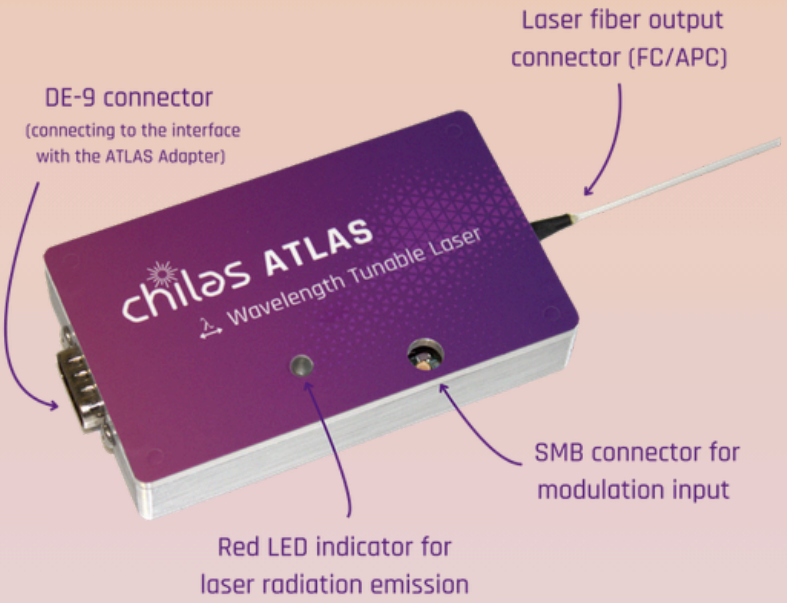
ATLAS comes with adapter for USB and power connection



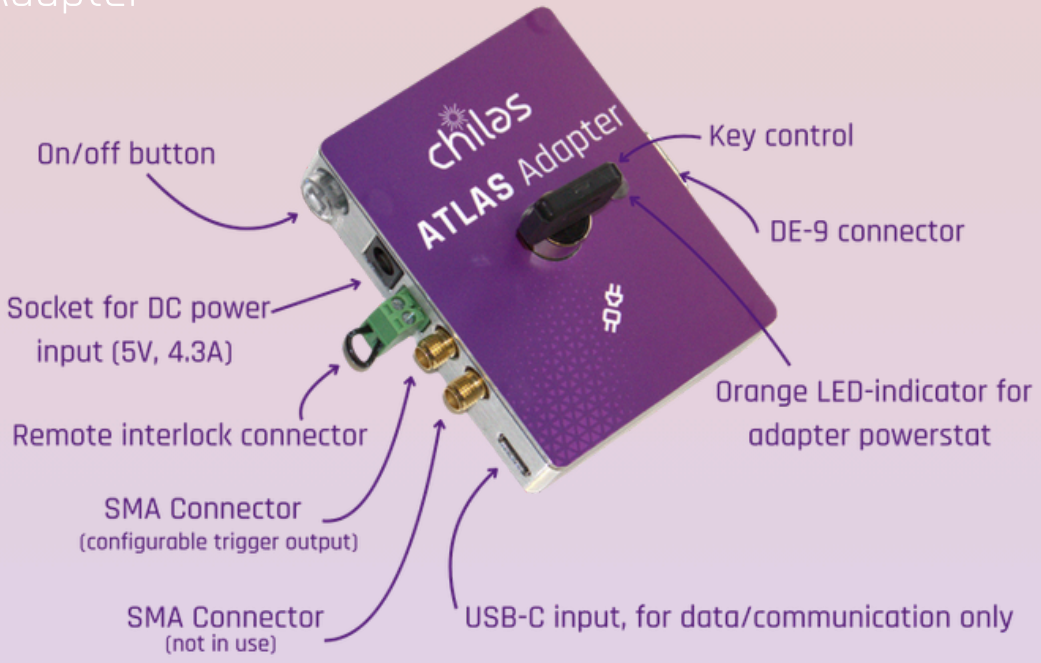
ATLAS in hand

Components overview

ATLAS Laser

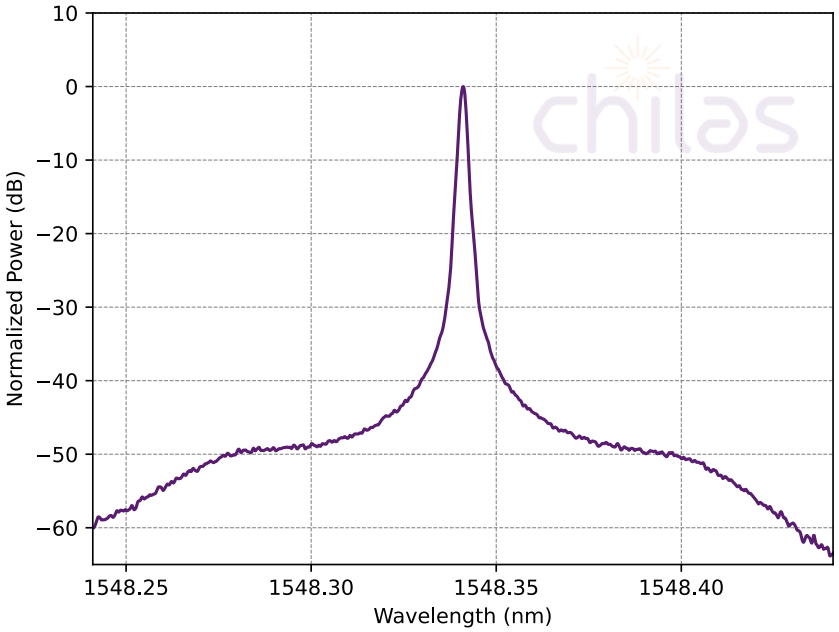


ATLAS Adapter



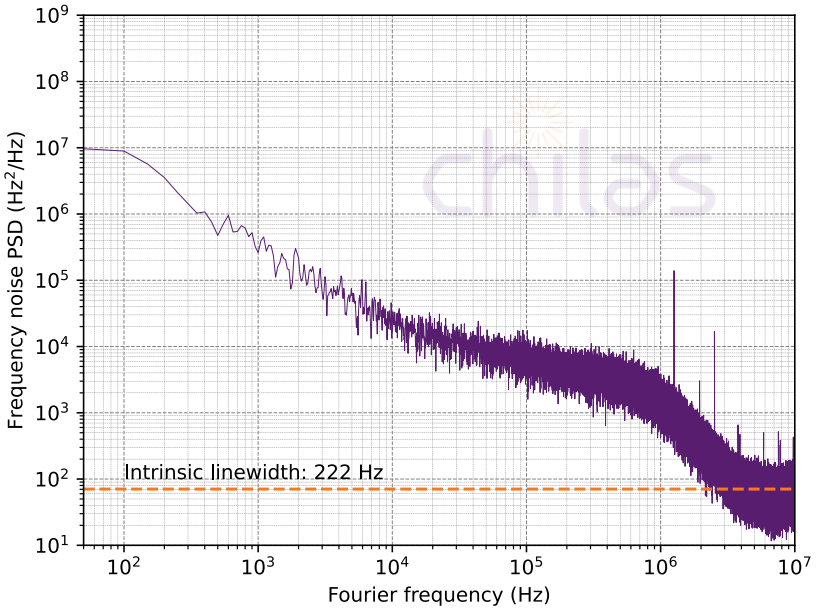
Measurement Results

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



Measured peak wavelength, using a high-resolution optical spectrum analyzer (OSA), while the laser operates at a fixed wavelength. The side mode suppression ratio is > 50 dB over the full wavelength range.

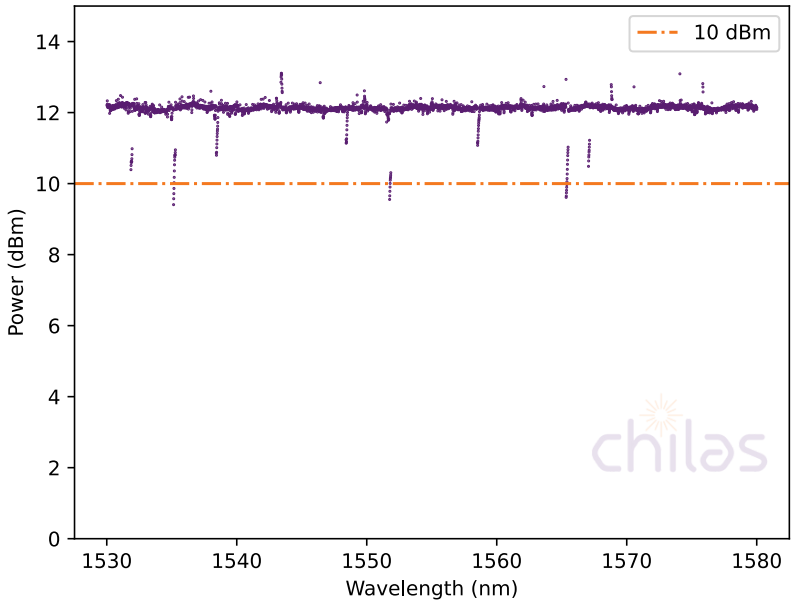
Frequency noise density as a function of frequency



Measured frequency noise, while the laser operates at a fixed wavelength. The intrinsic linewidth, as shown in the plot, is calculated from the white noise level above the Fourier frequency of 5 MHz.

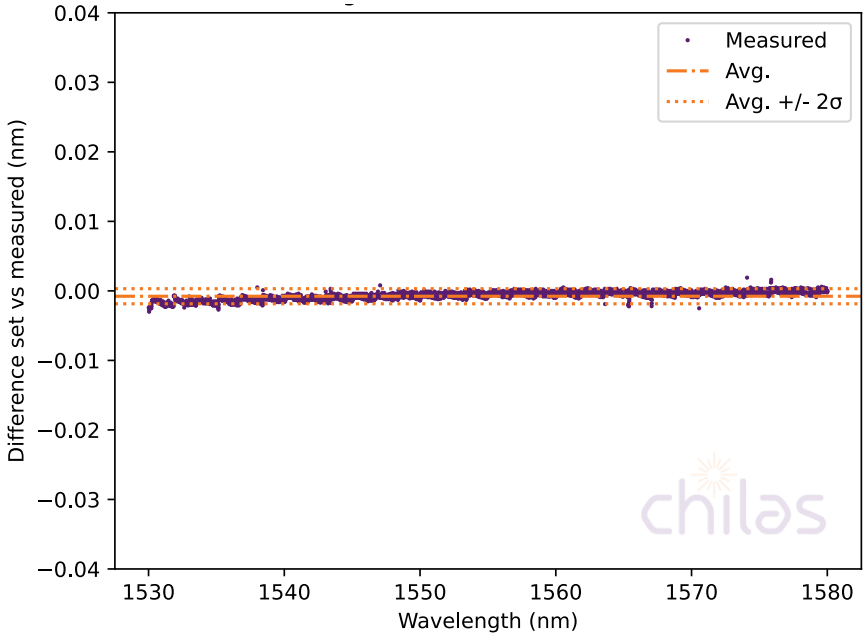
Measurement Results

Measured output power as a function of set wavelength



Measured output power of the Atlas laser across the entire wavelength range. The measurement is conducted for all individual settings in with a grid of 10 picometer. This laser has a stable power around 12 dBm across the entire range of 1530 nm to 1580 nm.

Measured output wavelength as a function of set wavelength



Measured output wavelength of the Atlas laser as a function of the calibrated wavelength. The measurement is conducted for all individual settings with a grid of 10 picometers. This lasers shows a high accuracy across the entire range, with the output within a few picometers of the calibrated wavelength.

OTHER LASER PRODUCTS FROM CHILAS

Wavelength Tunable Laser



ATLAS 1600

Wavelength Tunable Laser



ATLAS 850

Wavelength Tunable Laser



ATLAS 1700

Wavelength Tunable Laser



ATLAS 1310

Wavelength Tunable Laser



ATLAS 685

Swept Source Laser



COMET 1550

Frequency-Stabilized Laser



POLARIS

Chilas Lasers, Tuned to your Wavelength

General inquiries: info@chilasbv.com
Phone number: +31854019151

chilasbv.com

All information contained herein is believed to be accurate and is subject to change without notice. No responsibility is assumed for its use, Chilas B.V., reserves the right to change any product, specification, or data, without notice, to improve reliability, function, design or otherwise.