

LLA



DEVICE

Laser Linewidth Analyzer

OVERVIEW

The Optilab LLA is a laser linewidth analyzer based on the delayed self-heterodyne interferometric technique. It consists of a high-performance LiNbO3 phase modulator as the frequency shifter in the delayed self-heterodyne interferometer. The LLA also includes high-gain photoreceiver and RF amplifier, as well as a high-resolution spectrum analyzer for accurate and convenient measurement. The high sensitivity of the LLA allows measurement and analysis of lasers with intrinsic linewidth of several kHz. An intuitive and easy-to-use GUI can provide lineshape plots and Lorentzian fitting. Contact Optilab for more information.

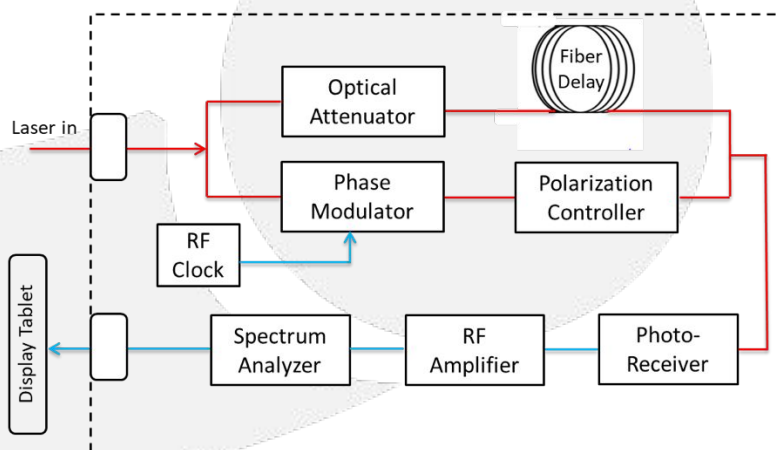
FEATURES

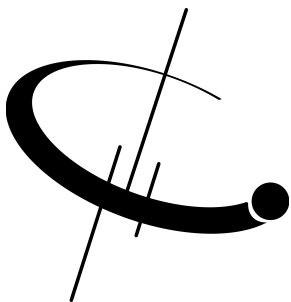
- Narrow Linewidth Laser Test
- Phase Modulator for Frequency Shifting
- High-Gain Photoreceiver & RF Amplifier
- Integrated RF Spectrum Analyzer (SA)
- Lorentzian Linewidth Fitting
- Optional RIN Noise Test Capability

USE IN

- Laser linewidth Measurement
- Coherent Communications
- Research & Development
- Test & Measurement

FUNCTIONAL DIAGRAM





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SPECIFICATIONS

GENERAL

Laser Wavelength	Customizable
Optical Input Power	≥ 7 dBm
Fiber Delay	10 - 100 μs, customizable
Linewidth Test Range	2 kHz – 100 MHz (see ordering option)
Shift Frequency	650 MHz
SA Frequency Range	1 Hz to 4.4 GHz
SA Resolution Bandwidth	0.1 Hz to 250 kHz
SA Dynamic Range	-151 dBm to 10 dBm

MECHANICAL

Operating Temperature	0°C to +50°C
Storage Temperature	-30°C to +70°C
Operating Humidity	0% to 85% Relative Humidity
Power Supply	100 – 240 VAC, 50 – 60 Hz
Weight	27.2 lb
Housing Dimensions	3U, 482.60mm x 470.57mm x 132.00mm
RF Connector	SMA female
Optical Connector	Diamond MAS Cleanable, FC/APC Default
Communication	USB 2.0

ORDERING OPTIONS

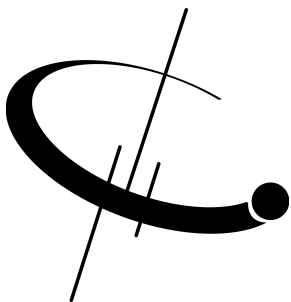
LLA-XXXX-YY

XXXX – Wavelength (nm): 1550, 1310

YY – Linewidth Range: NB = 2 – 500 kHz, BB: 500 kHz – 100 MHz

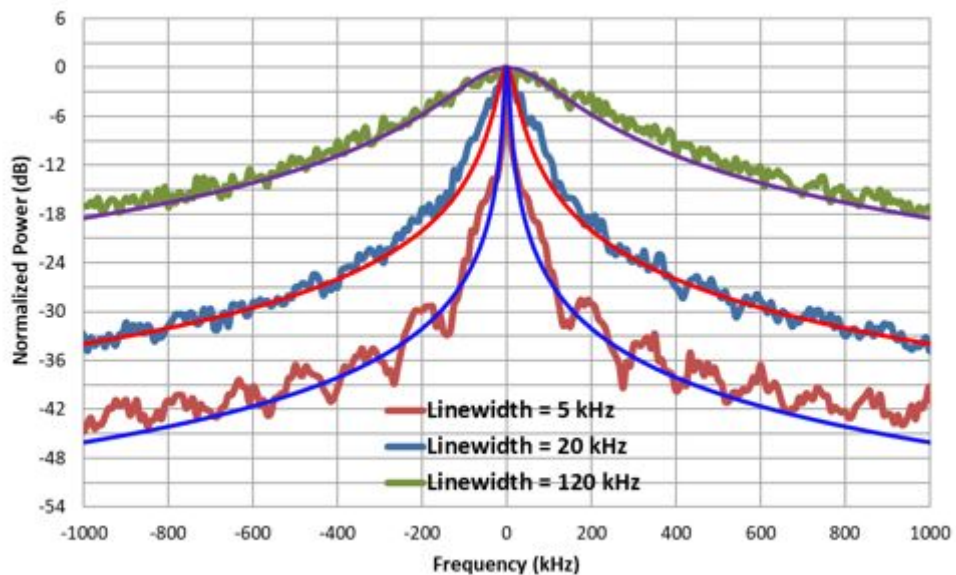
SB = Optical Switching for both NB and BB ranges





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TYPICAL LINEWIDTH DATA & FITTING

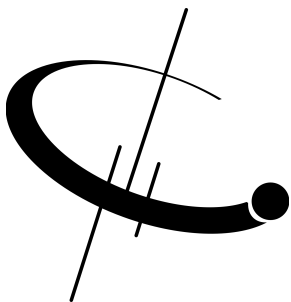


TOUCHSCREEN DISPLAY

LLA-1310-SB

POLARIZED INPUT:	LOW	SHIFT
POLARIZED OUTPUT:	LOW	INC
CLOCK FREQ:	650 MHz	SAVE
CLOCK STATE:	ON	NEXT
BANDWIDTH PATH:	WIDE	





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ACCESSORY UNITS

LLA-1310-ACCS

LLA-1310-Accs contains a 10 km low insertion loss fiber. It acts as an extra delay when measuring ultra-narrow linewidth laser (<5 kHz).



LLA-1310-PRECOND

LLA-1310-PreCond includes a variable optical attenuator and polarization controller. LLA-1310-PreCond is used to adjust the polarization and power level of the laser beam that is directed to the LLA-1310-Main unit.

