



HighFinesse  
Laser and Electronic Systems



## Calibration Sources

Frequency stabilized, narrow  
linewidth laser sources down to  
 $\pm 11$  kHz absolute accuracy

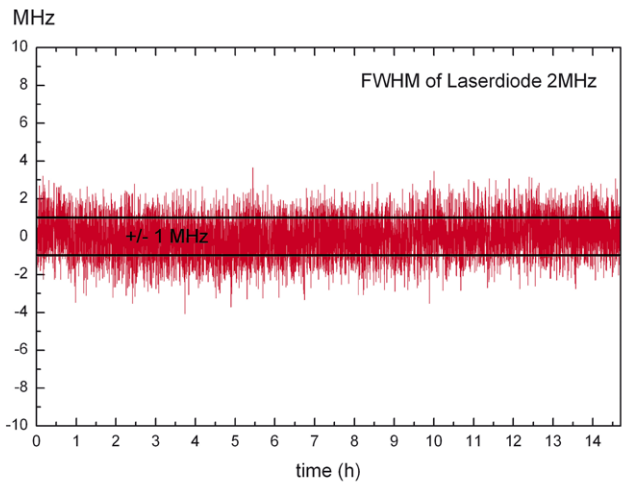
Stabilized Laser References (SLR series)  
HighFinesse Stabilized Laser References incorporate absorption spectroscopy systems, which yield extremely accurate frequency stabilizations, ideal for calibration of our wavelength meters in the visible and infrared wavelength regimes.

Plug and Play Functionability  
The SLR-series features extremely short warm-up time (< 2 min.), narrow linewidth and high stability, allowing the calibration of all wavelength meters.

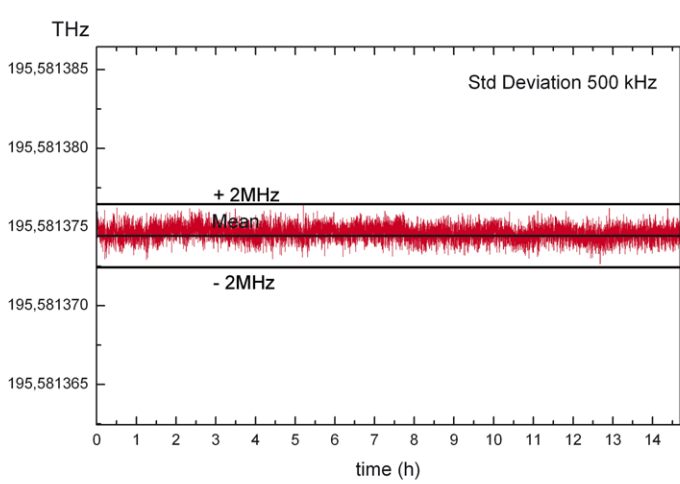
- Fiber coupled laser output
- Wavelengths: 780, 852, 895 and 1532 nm (other wavelengths on request)
- Output power (adjustable): 0 – 5 mW
- Frequency stability and absolute accuracy: better than  $\pm 2$  MHz at constant temperature
- Self (re-)calibration
- Compact design



Calibration Sources



The graph shows an SLR-1532 measurement of the beat signal with a frequency comb over 14 hours.



This picture shows the same SLR-1532 measured with a WS8 IR-I wavelength meter.

Automatic Calibration

It is possible to automatically re-calibrate the wavelength meter at user defined intervals, ranging from several weeks to the time between single measurements. This automatic procedure requires no user intervention and takes less than one second before returning to the measurement. When used in conjunction with the PID option, no loss of control of the laser is experienced.

External Calibration Sources

HighFinesse offers a variety of frequency stabilized, narrow line-width laser sources for different applications down to  $\pm 11$  kHz absolute accuracy. They are ideal for quick and accurate calibration of the complete series of our HighFinesse Wavelength Meters.

Integrated Calibration Sources

Standard HighFinesse Wavelength Meters up to an absolute accuracy of 60 MHz feature auto-calibration by integrated calibration sources. This way highest accuracy and stability of measurements with our wavelength meters is guaranteed.

Calibration Sources

Product	Wavelength	Absolute Frequency Accuracy	Output Power
Iodine Stabilized Nd:YAG Laser and integrated SHG	532 & 1064 nm	$\pm 100$ kHz	532 nm: > 2 mW, 1064 nm: > 5 mW
Iodine Stabilized Helium-Neon Laser	633 nm	$\pm 11$ kHz	typ. 60 $\mu$ W <sup>3)</sup>
Stabilized Laser Reference (Rubidium) <sup>1)</sup>	780 nm	$\pm 0.5$ MHz	Low power output: 10 $\mu$ W High power output: 1 mW <sup>3)</sup>
Stabilized Laser Reference (Cesium) <sup>2)</sup>	852 nm	$\pm 2$ MHz	0 – 5 mW <sup>3)</sup>
Stabilized Laser Reference (Acetylene)	1532 nm	$\pm 2$ MHz	0 – 3 mW <sup>3)</sup>
Stabilized Laser Reference (Hydrogen Cyanide)	1550 nm	$\pm 10$ MHz	0 – 3 mW <sup>3)</sup>
Frequency Stabilized HeNe Laser	633 nm	$\pm 25$ MHz <sup>4)</sup>	$\geq 1.2$ (typ. 1.5) mW
Frequency Stabilized HeNe Laser	633 nm	$\pm 5$ MHz <sup>4)</sup>	$\geq 0.8$ (typ. 1.0) mW

1) Other Rubidium wavelengths on request    2) Other Cesium wavelengths on request    3) Higher power on request    4) After 40 minutes run time



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## Wavelength Meter

HighFinesse/Ångström offers sensitive and compact wavelength meters with a large spectral range for high speed measurement of lasers. The optical unit consists of temperature-controlled Fizeau-based interferometers that are read out by photodiode arrays. The high absolute accuracy is achieved by use of solid state, non-moving optics. The optical unit and associated electronics are housed in a compact, thermal casing. The connection to a computer or notebook is realized via a highspeed USB 2.0 port, which allows a high data read-out rate. The analyzing software displays all the interferometer information.



## Spectrometer OSA

HighFinesse/Ångström optical spectrometers LSA and HDSA are designed to analyze the multi-line or broadband spectrum of light sources like cw and pulsed lasers, gas discharge lamps, super luminescence diodes, semiconductor laser diodes and LEDs. They are suitable to analyze the spectrum of telecom signals, resolve Fabry-Perot modes of a gain chip, and produce a spectral measurement of gas absorption.



## Precision Current Sources

HighFinesse Precision Current Sources have been developed for experiments and quantum technologies in the areas of Cold atom physics and solid-state-physics. The linearly regulated BCS (Bipolar Current Source) and UCS (Unipolar Current Source) series deliver highly stable, low noise source currents for high precision magnetic field control. The current output is floating or is on a user defined potential. Ultrafast response to control signals and trigger functions, clear grounding, connection and signal isolation schemes make the integration of the current sources into complex experimental systems easy.



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