LW-10 Wavelength Meter

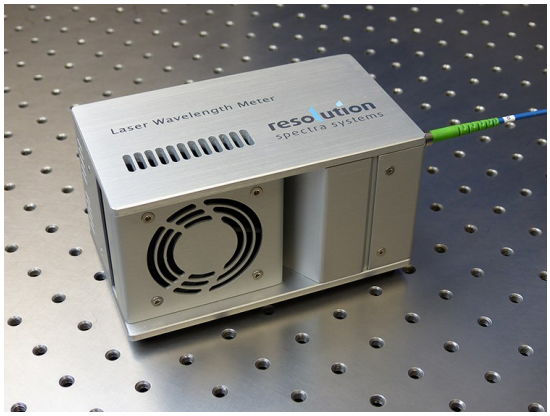
Compact High-Resolution Laser Wavelength Meter

Thanks to its all integrated technology, the LW-10 combines high performances and affordable price within a compact design. Its 20 MHz resolution and 200 MHz absolute accuracy makes it the perfect tool for tunable laser wavelength monitoring on the 630-1100 nm range for lasers such as Ti:Sapphire, DFB, ECDL.

SPECIFICATIONS	
Wavelength range	700 - 1000 nm (optional: 630 - 700 / 1000 - 1100 nm)
Wavelength resolution [1]	20 MHz
Absolute accuracy [1] [2] [3] [4]	200 MHz
Maximum linewidth	30 GHz
Real-time measurement speed [5]	> 20 Hz
Maximum measurement speed	600 Hz
Exposure time	16 µs - 10 s
Input power range [6]	10 nW - 1000 µW
Optical input	FC/APC PM singlemode fiber N.A. 0.12
Power consumption	11 W - 450 mA @ 24 VDC
Communication	Gigabit Ethernet
Dimensions	14.9 x 8.6 x 8 cm
Weight	1 kg

FUNCTIONALITIES with SpectraResolver software	
Compatibility	Windows 7, 8 & 10
Unit change	nm (vacuum and standard air) / cm^{-1} / THz
Software development kit	C/C++, Python, DotNet, VIs libraries, TCP/IP
Trigger	Front Trigger

[1] Performance guaranteed on the 700 - 1000 nm range.
[2] T° calibrated on 16-30°C. For quality check, an absolute accuracy calibration procedure is available with SpectraResolver. Not *frequently* required.
[3] Warm-up: best performances are achieved under steady state conditions, typically ambient temperature stable at +/- 0.5°C per hour maximum, constant air flow, LW-10 running for more than 30 minutes. No sensitivity to air pressure variation.
[4] According to 3σ criterion.
[5] Computational speed. Depending on PC hardware and settings.
[6] Coupled in Polarization Maintaining singlemode fiber.



Key features

- 20 MHz resolution
- 200 MHz absolute accuracy
- For pulsed and CW lasers
- User-friendly software
- Compact size

Applications

- For single frequency lasers only (pulsed and CW lasers)
- Narrow-linewidth OPO
- Tunable laser control
- Laser stability control
- Frequency locking

Available options

- Multi-channel
- Laser control analog output (PID)
- Laser spectrum analyzer function

SWIFTS™ TECHNOLOGY
Patents UJF/INPG/UTT/CNRS

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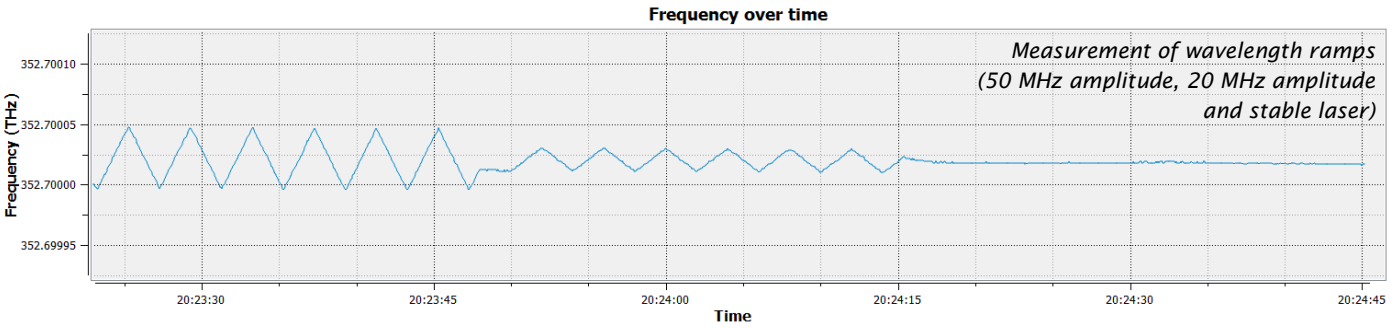
LW-10: 20 MHz resolution and 200 MHz absolute accuracy

LW-10 is a very compact and high-resolution laser wavelength meter with robust calibration over time and multiple software interface capabilities, for CW and pulsed lasers in the 700 - 1000 nm range.



Calibration robustness

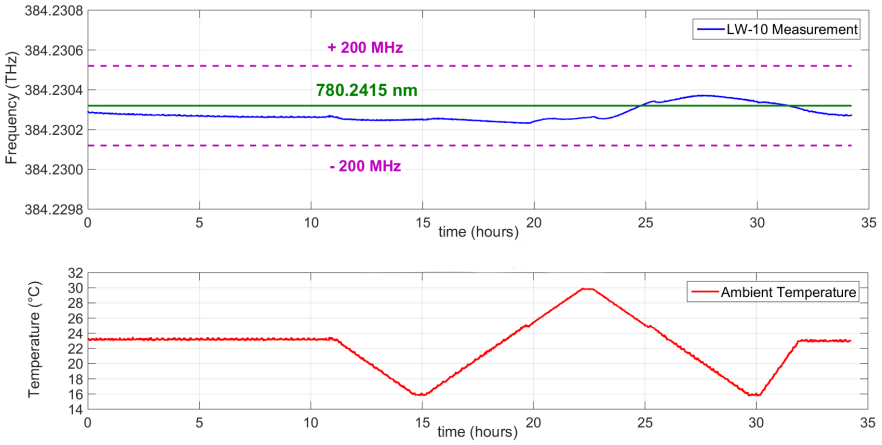
LW-10 wavelength meter consists of a temperature-controlled waveguide in which a stationary wave is created, sampled and read out by a linear image sensor array (SWIFTS technology). This linear integrated configuration with no moving part demonstrates insensitivity to air pressure variation and unique stability over time. This results in a long-life calibration on the whole wavelength range, more reliable than a frequent recalibration at a single wavelength. LW-10 can be easily moved with no risk of calibration shift. Measurements are not sensitive to small movements of the input fiber.

Applications

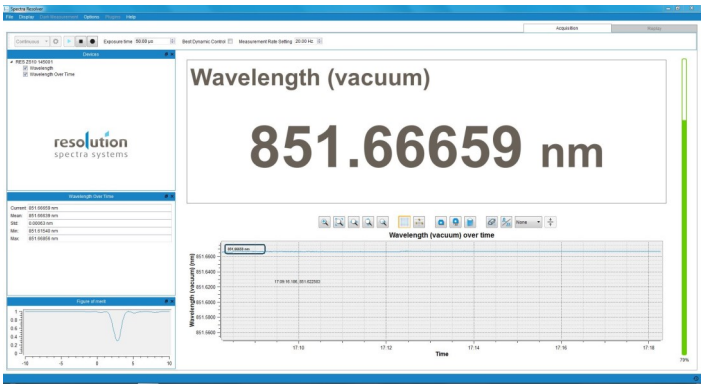
LW-10 characteristics are ideal for applications such as tunable laser monitoring (Ti:Sapphire laser, External Cavity Diode Laser (ECDL) and narrow-linewidth OPO), frequency locking (atom cooling, atom trapping and spectroscopy applications) and frequency mixing (THz and DUV generation).

Options

Multi-channel optical switch and laser control analog output devices are available with our *SpectraResolver* software interface.



Stability over time with temperature variations



Multiple software capabilities

SpectraResolver user-friendly software has been designed so that you can focus on your application. The Gigabit Ethernet connection to a computer allows a very reliable connection. Trigger mode is offered as standard feature. A software development kit is available for integration to your setup including C/C++, Python, DotNet, LabView VIs and TCP/IP.