

# 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 <sup>(1)</sup>	20 MHz
Absolute accuracy <sup>(1) (2) (3) (4)</sup>	200 MHz
Maximum linewidth	30 GHz
Real-time measurement speed <sup>(5)</sup>	> 20 Hz
Maximum measurement speed	600 Hz
Exposure time	16 $\mu$ s - 10 s
Input power range <sup>(6)</sup>	10 nW - 1000 $\mu$ W
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) / $\text{cm}^{-1}$ / THz
Software development kit	C/C++, Python, DotNet, VIs libraries, TCP/IP
Trigger	Front Trigger



### 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

<sup>(1)</sup> Performance guaranteed on the 700 - 1000 nm range.

<sup>(2)</sup> T° calibrated on 16-30°C. For quality check, an absolute accuracy calibration procedure is available with SpectraResolver. Not frequently required.

<sup>(3)</sup> 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.

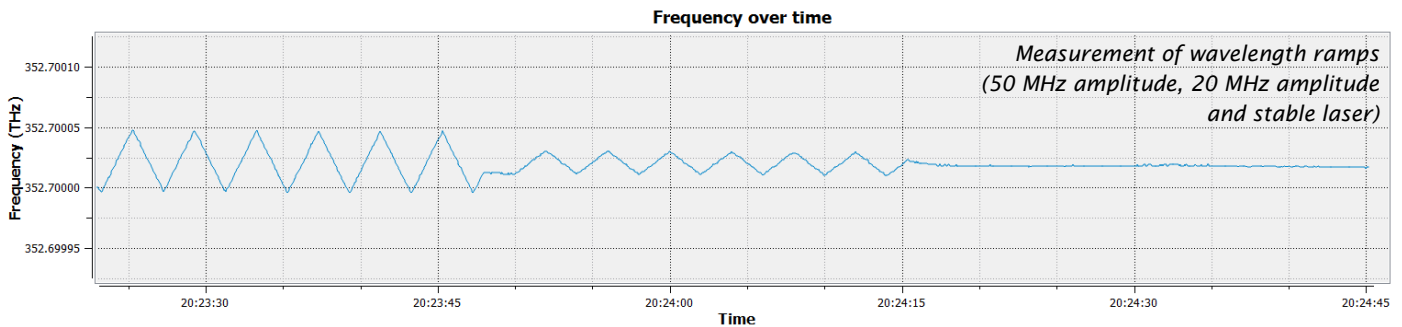
<sup>(4)</sup> According to 3 $\sigma$  criterion.

<sup>(5)</sup> Computational speed. Depending on PC hardware and settings.

<sup>(6)</sup> Coupled in Polarization Maintaining singlemode fiber.

# 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

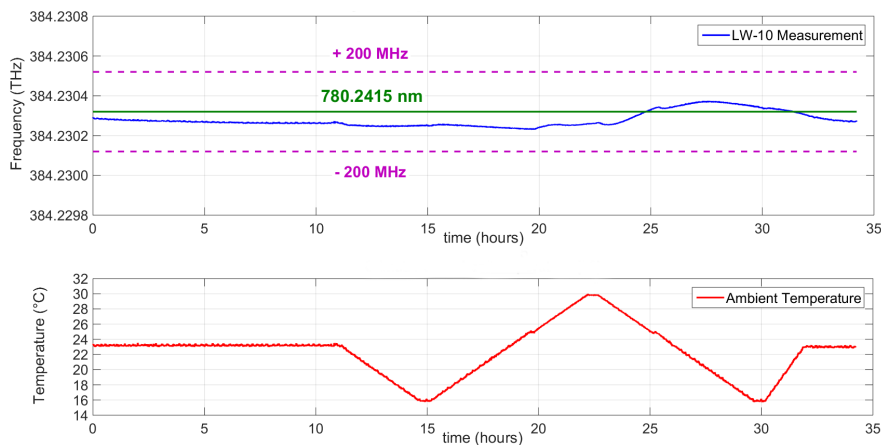
LW-10 wavelength meter consists of a temperature-controlled waveguide in which a stationary wave is created, sampled and read out by a linear image sensor array (SWIFTS technology). This linear integrated configuration with no moving part demonstrates insensitivity to air pressure variation and unique 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

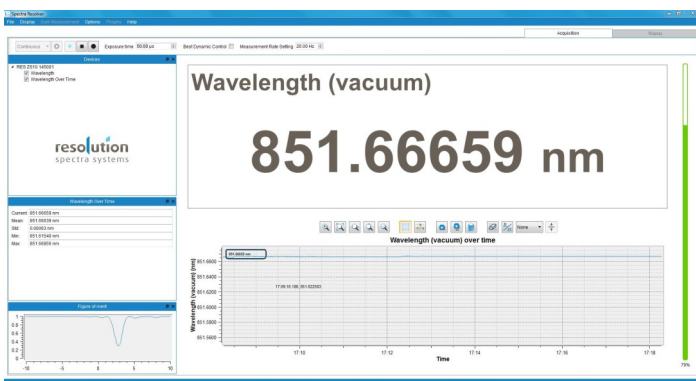
LW-10 characteristics are ideal for applications such as tunable laser monitoring (Ti:Sapphire laser, External Cavity Diode Laser (ECDL) and narrow-linewidth OPO), frequency locking (atom cooling, atom trapping and spectroscopy applications) and frequency mixing (THz and DUV generation).

## 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.