

MWM Laser Wavemeter



The MOGLabs Laser Wavemeter is a precision compact laser wavelength measurement device, and optical spectrum analyser, with on-unit display and ethernet/USB connectivity standard. Use it standalone or with the included Windows GUI software package.

Unlike interferometric wavemeters, our device clearly reveals multimode laser operation, making it particularly suitable for use with external cavity diode lasers and atom cooling and trapping experiments.

At prices so low you can afford to put a wavemeter on every laser in your lab, to know when your laser is unlocked or multimoding.

Features

- Picometre (<GHz) accuracy
- Picowatt sensitivity
- Any wavelength from 350nm to 1620nm⁺
- Instantly identifies multimode input
- Fast: up to 1250 measurements per second
- CW or pulsed laser input
- Built-in PID feedback with analogue output
- Ethernet and USB standard

Applications

- Laser frequency diagnosis and testing
- Identifying laser multimode behaviour
- Determining absorption lines
- Gas spectrometry
- Raman fluorescence

Laser Wavemeter

Specifications MWM

Wavelength/frequency

Wavelength range	350nm – 1620nm Supplied calibrated at one wavelength e.g. 780 ± 12 nm
Input power requirement	<1 pW (1 picowatt); max 30 nW
Precision	100MHz (0.1pm) at 780nm
Accuracy	± 1 GHz / ± 0.001 nm at 780nm, at time of calibration
Optical resolution	< 0.02 nm (σ std dev, wavelength dependent)
Dynamic range	> 35 dB (>50dB with HDR)

Electronics

Display	Built-in LCD and host computer
Interface	Windows GUI
PID feedback	12-bit DAC output, 0.5mV resolution, 10 Hz bandwidth
Readout	Typically 20 per second, up to 100 /s, host dependent

Interface

Ethernet	10/100 TP RJ45
USB	USB2.0, plug type USB-B (350mA with display on)
SMA	Analogue output, ± 2.5 V, for PID feedback control
Power consumption	5W

Inputs/outputs

Optical input	FC single mode fibre
DAC	12-bit output, ± 2.5 V, 0.5mV resolution

Dimensions

Dimensions (approx.)	165mm x 85mm x 70mm (LxWxH)
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[†]Note: the MWM operates over a small wavelength range, e.g. 780 ± 12 nm. Operation in a different wavelength range requires mechanical adjustment and recalibration.

