



FZW Fizeau Laser Wavemeter



The MOGLabs FZW Fizeau Laser Wavemeter is a precision compact self-contained wavemeter: *no host computer required*.

It measures from 400 to 1100nm with absolute accuracy better than 600MHz (3σ). On-unit display, ethernet and USB connectivity, and PID locking, are standard. Time-series measurements at up to 500 measurements per second can be plotted on the display or on a host computer. The device is easily integrated with common lab data acquisition systems using simple text commands, and wrappers for LabVIEW, python and MATLAB.

Matching MEMS based fibre switchers are available, with 2, 4 and 8 input ports. The 4x1 and 8x1 versions have 4 and 8 analogue outputs with PID to wavelength-stabilise up to 8 lasers.

Features

- 600 MHz (3σ) absolute accuracy, 400 to 1100nm (measurement range 350 to 1120nm)
- Self-contained with colour display
- Solid fused silica etalons
- 350 measurements per second
- Built-in PID feedback with analogue output
- Ethernet and USB standard

Options

- FC/PC or FC/APC input available
- 2x1, 4x1 and 8x1 fibre switchers available (FC/APC only)
- OEM versions

Fizeau Wavemeter

Specifications FZW600

Wavelength/frequency

Wavelength range	350nm – 1120nm
Units	nm (vac), nm (air; NTP), THz, cm^{-1}
Input power requirement	100nW @ 10 /sec; 10 μ W at 350 /sec (525nm)
Accuracy	600 MHz (3 σ) @ 400nm – 1100nm; typically 200MHz
Resolution	10 MHz (full speed); 1 MHz (100-sample average)
Exposure	100 μ s to 1 s
Measurement rate (>500 μ W)	350 /s (wide mode) 150 /s (fine mode)
Fizeau interferometers	4; smallest FSR = 7.5GHz
Calibration	Not required to maintain specified accuracy
Warm-up time	Stated accuracy within 10 minutes

Electronics

Display	Built-in 320x240 colour TFT LCD
PID feedback	12-bit DAC output, 0.5mV resolution
Power	+5V 600mA via USB or separate DC jack
On/off	Rocker switch on rear

Communications

Ethernet	10/100 TP RJ45
USB	USB2.0, plug type USB-B (also used for power)
SPI	Internal; for OEM implementations

Inputs/outputs

Optical input	FC/PC or FC/APC, singlemode
Power (alternate to USB power)	DC jack, + on centre 2.5mm pin

Fibre switcher (multiplexer)

Wavelength range	400nm to 1120nm
Lifetime	>20 billion cycles
Switching time	5ms (typ), 10ms (max)
Optical power limit	500mW max
Insertion loss	< 2.0dB at 600nm (see FZW user manual for details)
SMA DAC out with PID	4 or 8 channels, 16-bit output, $\pm 2.5\text{V}$ (N/A for FSM2)
Connectors	FC/APC 2x1, 4x1 or 8x1
Electrical power	+5v, 150mW, from FZW via M8 cable

Dimensions

Dimensions	120mm x 146mm x 81mm (DxWxH); 0.7kg
Dimensions with fibre switch	120mm x 146mm x 114mm (DxWxH); 1.35kg