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 fibre switches are available, with 4 and 8 input ports, and 4 or 8 analogue outputs with PID to wavelength-stabilise up to 8 lasers.

Features

- 600 MHz (3σ) absolute accuracy, 350 to 1120nm Can measure to 1280nm
- Self-contained with colour display
- Solid fused silica etalons
- 300 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 switches available

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Fizeau Wavemeter

Specifications FZW600

Wavelength/frequency	
Wavelength range	350nm – 1120nm Can measure to 1280nm with 10mW in fibre
Units	nm (vac), nm (air; NTP), THz, cm^{-1}
Input	FC/APC (standard), FC/PC (optional) 100nW @ 10 /sec; 10µW at 300 /sec (525nm)
Accuracy	600 MHz (3σ) @ 400nm – 1100nm; typically 200MHz
Resolution	10 MHz (full speed); 1 MHz (100-sample average)
Exposure	100µs to 1 s
Measurement rate (>500 µW)	300 /s (fast mode) 150 /s (standard)
Fizeau interferometers	Fused silica optically contacted; smallest FSR = 7.5GHz
Calibration	Generally not required. Use stabilised HeNe or other well-known laser source, e.g. at 12-month intervals.
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 500mA via USB; 9 V – 30 V via DC jack 2.5mm
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
Fibre switch (multiplexer)	
Wavelength range	400nm to 1120nm
Lifetime	>20 billion cycles
Connectors	2x1, 4x1 or 8x1, FC/APC (standard), FC/PC (optional)
Switching time	4x1, 8x1: 5ms (typ), 10ms (max) 2x1: 10ms (typ), 25ms (max)
Insertion loss	< 2.0dB at 600nm, up to 13dB at 400nm and 1120nm
SMA DAC out with PID	4 or 8 channels, 16-bit, ±2.5V (4x1 and 8x1 only)
Power	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

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