Compact Wavelength Meter 450-950nm 1kHz Resolution 2pm

Product Description

This is a highly accurate and very compact wavelength meter. The innovative internal design makes it faster, easier to operate and much smaller than competing products. The input light can be CW and quasi-CW lasers or incoherent light with a narrow spectrum. Wavelength data is available at 1kHz. Data rates are provided with no warm-up delay. Via USB, the cable is operated via a provided software interface or text-based commands. In addition, the wavelength information is available as a voltage on the analog output. Due to its extremely small size, it is very suitable as an OEM Components, for example for tunable lasers, as part of larger measurement equipment and in a wide range of other applications.

Part Number

CWM-2pm-1kHz

Product features

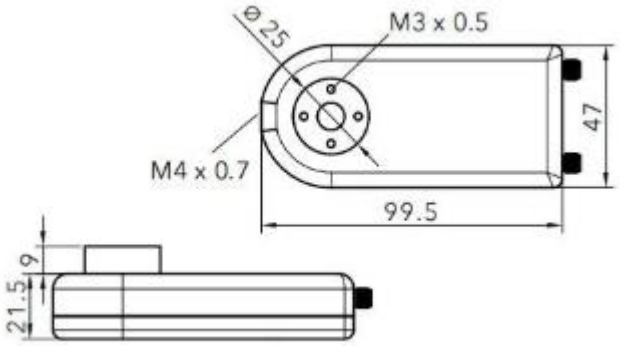
Compact and easy to use、 powered by USB、 PC Display and analog output、

Logging and data export、 Wide input power range

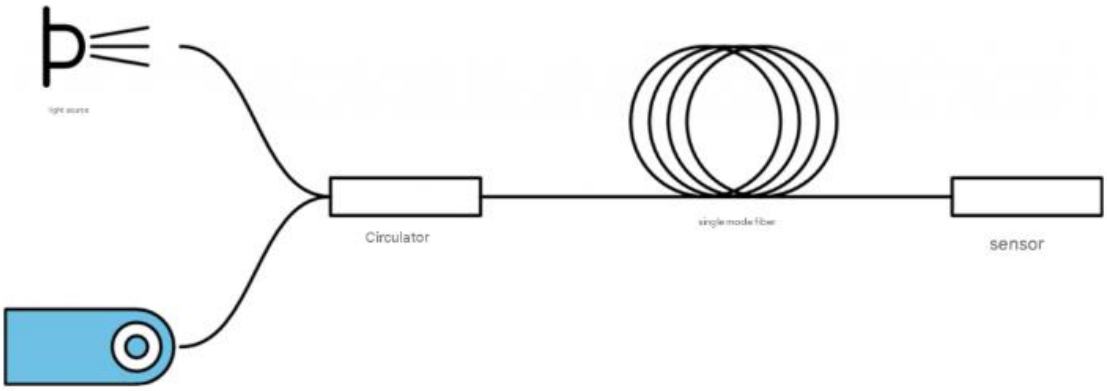
Application area

Characterization of Diode Lasers 、 Integration into tunable lasers 、 Spectroscopy、 Gas Detection、 Characterization of detectors and other test equipment

Dimensional Drawing



Application examples of compact wavemeters:
Photonic Fiber Optic Sensors



The figure above shows a type of photonic fiber optic sensor, such as

- GaAs temperature sensor
- Refractive index sensor (localized surface plasmon resonance)
- Photonic crystal structure

A broadband light source (usually a laser diode or LED) is coupled to a single-mode optical fiber. At the end of the fiber, a photon sensor element reflects a certain part of the light spectrum. This reflected light is guided to a detector with a fiber circulator. The sensor element operates in such a way that the spectral peak of the reflected light varies with the physical quantity of interest.
Since compact wavelength meters are not limited to measuring narrow-band laser radiation, they are well suited to measuring these spectral shifts.

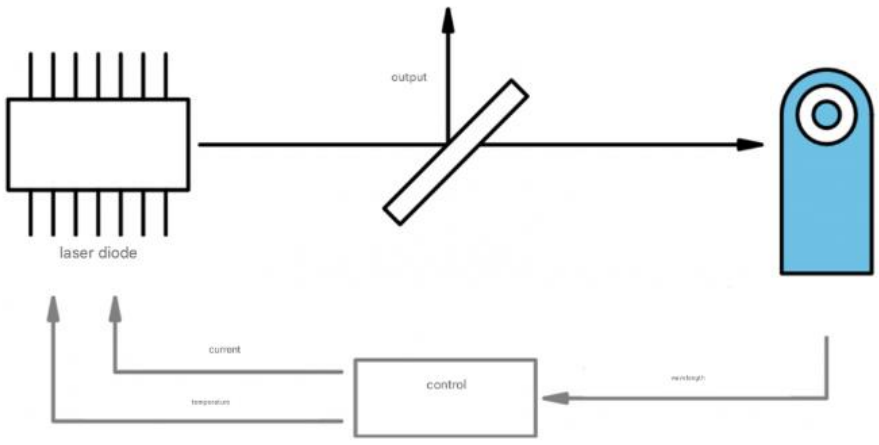
Compared with the spectrometer, the wavelength meter has the following characteristics:

- Faster
- Smaller
- Mechanically strong
- Accurate in low light conditions

The OEM version of the compact wave meter can

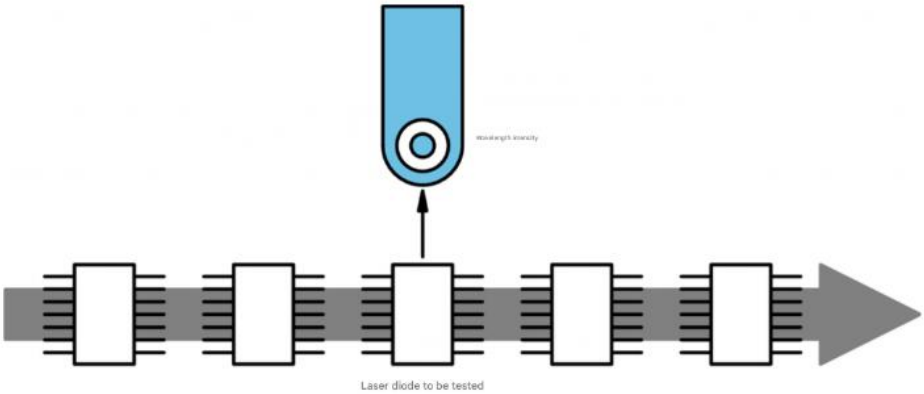
- Tuned to a specific wavelength range
- Sampling speed/bandwidth has been improved
- Expandable to multiple measurement channels

Stabilized laser module



The compact wavelength meter can be used to stabilize the wavelength of tunable lasers, such as laser diodes. It provides an accurate and fast wavelength signal. Suitable control electronics can form a feedback loop to lock the wavelength and provide continuous tuning within the mode-hop-free tuning range of the laser diode.
Compared to other wavelength references, it is cheap, much smaller, and very easy to integrate into laser modules.

Production Test



Due to its high data rate and easy alignment, it is ideally suited for production testing of laser diodes.

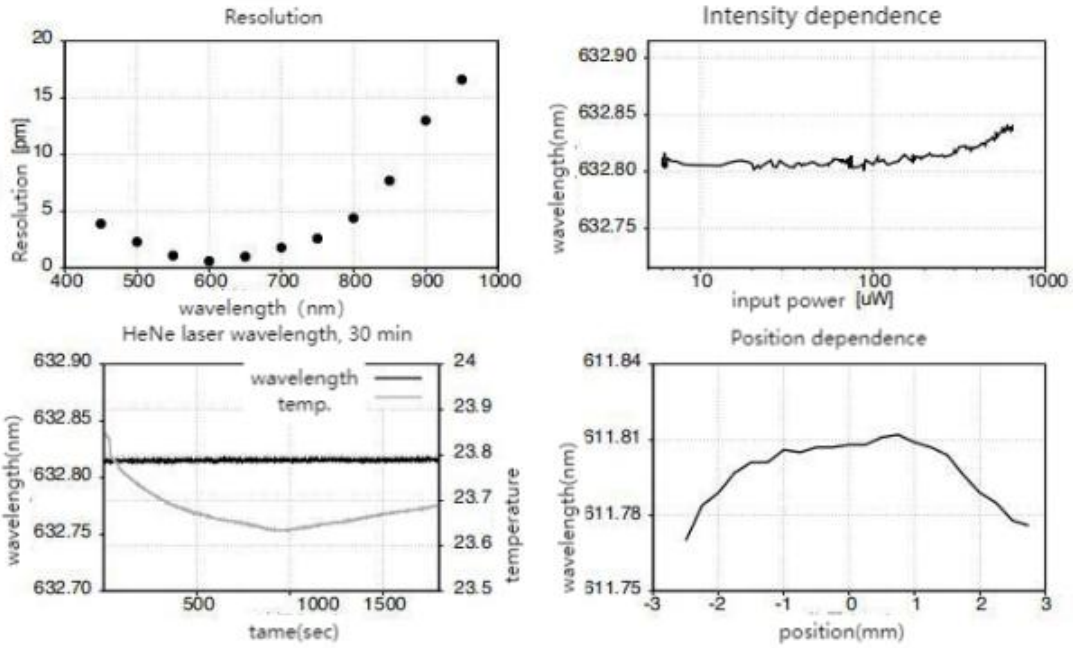
Large numbers of laser diodes can be tested without the need for fiber coupling or precise free-space alignment. It can characterize the temperature and drive current dependence of lasers in a fraction of the time of other spectral measurement equipment.

Parameters

General parameters

Spectral range	450 to 950nm
Resolution	2 pm @ 700nm
Accuracy, factory calibrated	100 pm
Accuracy, user calibration	20 pm
Input power range	0.1 μW to 1mW
Max . limit, input spectrum	1nm
Max . limit, data rate	1 kHz
Analog output range	0 to 4.096 V
Analog resolution	16 bits
Temperature range	18 to 32 ℃

feature


Resolution
Resolution [pm]
wavelength (nm)
Intensity dependence
wavelength(nm)
input power [uW]
HeNe laser wavelength, 30 min
wavelength
temp.
wavelength(nm)
temperature
tame(sec)
Position dependence
wavelength(nm)
position(mm)