

Wavelength Meter WS6-200 IR-I Standalone



HighFinesse
The Standard of Accuracy



Ångström

Available Measurement Ranges

WS6-200 IR-I Standalone	630 – 1750 nm
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Absolute (and Other) Accuracies

630 – 800 nm	200 MHz
800 – 1180 nm	150 MHz
1180 – 1750 nm	120 MHz
1530 – 1565 nm	100 MHz ¹⁾
Quick coupling accuracy (with 50 µm multi mode fiber)	600 MHz
Wavelength deviation sensitivity/Measurement resolution ²⁾	4 MHz
Linewidth estimation accuracy ^{3) 4)}	400 MHz

Measurement Speed

Continuous	1600 Hz
Trigger Mode 1	1400 Hz
Trigger Mode 2	800 Hz (with adjustable exposure time)

Required Minimum Input Energy and Power ⁵⁾

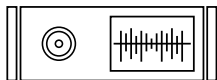
IR-I	8 – 800 µW
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For low power instruments with increased sensitivity, please contact HighFinesse support.

FSR of the Fizeau Interferometers (Fine/Wide Mode)

16 GHz/16 GHz

- 1) Using the built-in calibration source every week and an appropriate reference laser (e.g. HighFinesse LFR-1532) for calibration and lamp correlation every half a year.
- 2) Standard deviation. WS6-200 requires singlemode fibers to reach this resolution.
- 3) Not better than 20 % of the linewidth.
- 4) Each instrument in each mode can measure lasers with a linewidth up to 30 % of the correspondig FSR.
- 5) The CW power interpretation in [µW] compares to an exposure of 1 s.



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Calibration

Built-in calibration source, optionally an external laser can be used (e.g. HighFinesse SLR-1532)

Recommended calibration period ≤ 1 month

Dimensions L × W × H

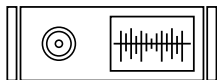
436 × 342 × 133 mm (without feet)

Weight

10.6 kg

Power Supply

50 W, external power supply included



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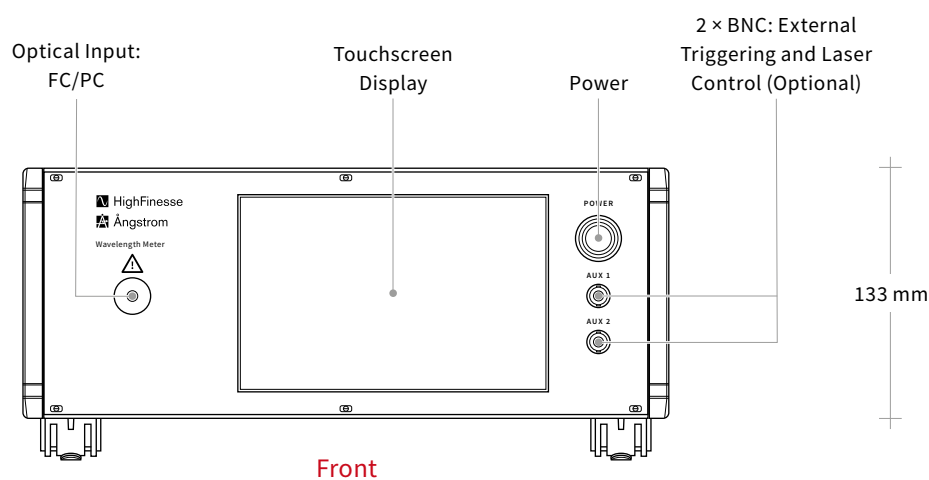
Interface

Standalone unit with touchscreen

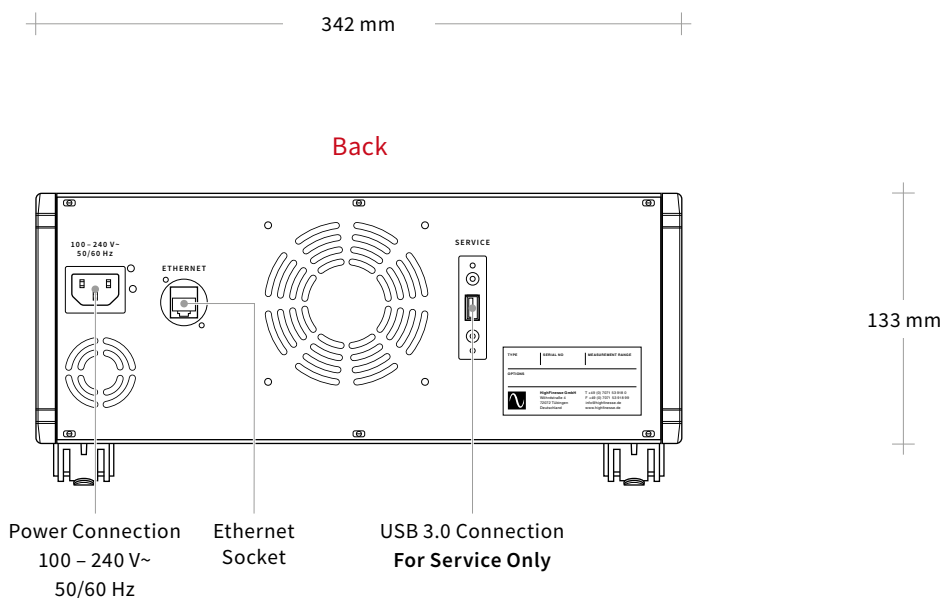
Measurement data is processed internally

Network access via API:

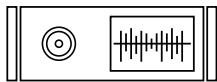
control via HighFinesse network access shared library solution or Standard Commands for Programmable Instruments (SCPI)



Front



Back



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Options

External Trigger (TTL)

External triggering via TTL guarantees synchronization between pulsed excitation and measurement. It provides low-noise signals without parasitic parts when measuring pulsed signals with low duty cycles.

Laser Control (PID)

With the PID option it is possible to stabilize the frequency of a laser connected to the wavelength meter using a software based proportional-integral-derivative controller (PID controller). Unlike analog PID electronics, the PID option provides software based signal processing, allowing the laser to be stabilized to a specific user defined frequency or regulated with an arbitrary pattern.

This makes it extremely useful in experiments where the laser frequency has to be actively regulated or varied to fit changing experimental conditions, such as laser cooling, atomic detection, trapping and spectroscopy.

Linewidth Estimation (L)

The linewidth estimation of a singlemode laser source is performed by a special algorithm which eliminates the interferometer's instrument response function. The algorithm enables the estimation of the linewidth with an accuracy better than the tenth of the instrument FSR.

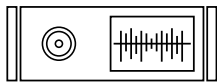
The linewidth option can also be used for measuring the linewidth of multimode lasers or lasers with sidebands. In this case, the longitudinal mode splitting needs to be less than the instruments spectral resolution and the calculated result is the FWHM of the envelope function of the multiline spectrum. Any instrument can be upgraded with the L-option.

Singlemode fibers are required.

External Calibration (CAL)

The wavelength meter WS6-200 IR-I standalone features autocalibration via an integrated calibration source. This guarantees the accuracy and stability of measurements with our wavelength meter. For higher accuracy in the range from 1530 nm to 1565 nm we offer the LFR-1532.

For further information see our product description here: <https://www.highfinesse.de/cal>



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Typical Applications

The WS6-200 IR-I Standalone offers an accuracy of 200 MHz. It is mostly used for pulsed lasers and cw laser. This instrument is best combined with singlemode fibers in order to reach optimum accuracy.

Further Information

For further technical information, application examples, diagrams and for customization of the WS6-200 IR-I Standalone please contact:

HighFinesse Team

service@highfinesse.de



HighFinesse GmbH
Neckarsulmer Straße 5
72072 Tübingen, Germany



T +49 (0) 7071 - 53 918 0
F +49 (0) 7071 - 53 918 99
M info@highfinesse.com



Additional information
and distributors:
www.highfinesse.com