

Smart Power Meter for cyclists

The WASP smart power meter is an advanced training aid for serious cyclists. It measures opposing forces acting upon a cyclist while riding.

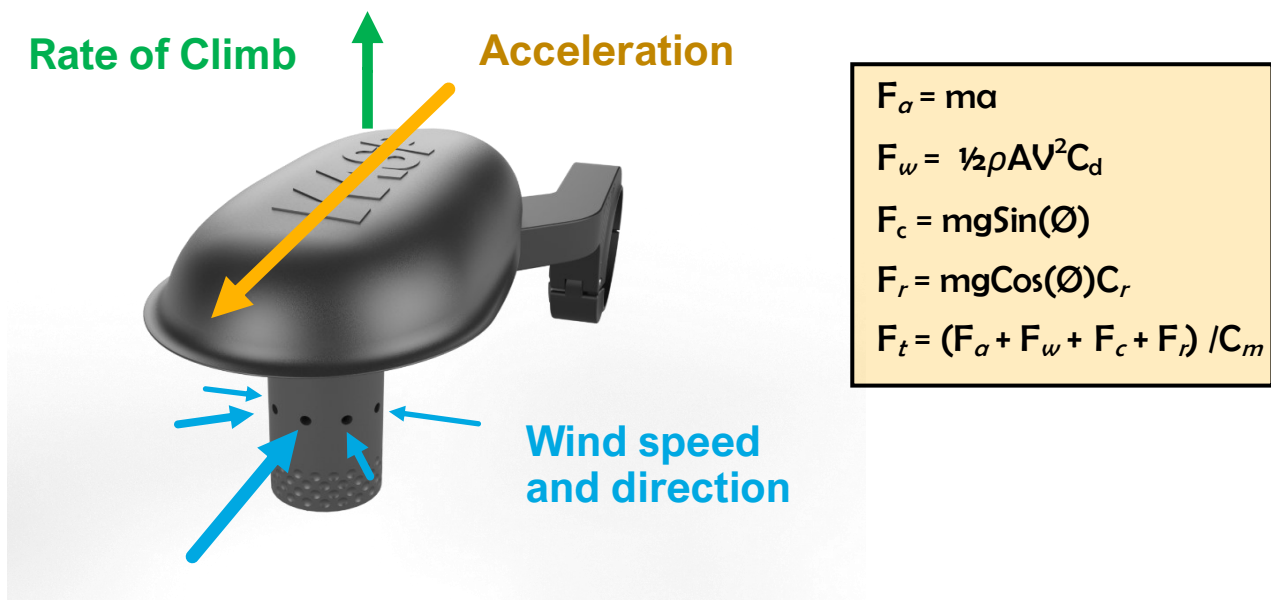
There are five forces required to calculate total exerted power:

- Acceleration
- Rate of Climb
- Rolling resistance
- Mechanical friction
- Wind resistance

Acceleration, rate of climb, rolling resistance and mechanical friction are relatively easy to measure and/or calculate, however the effect of wind is far more difficult to quantify.

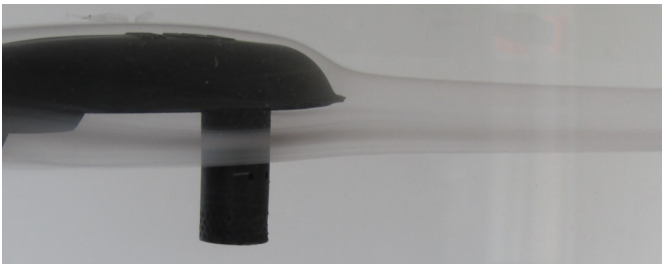
Our innovative wind sensor has been designed with state of the art pressure sensing technology to read wind speed and direction. This enables more accurate computations of wind resistance than has previously been achieved in small, low power devices.

By individually measuring the forces associated with wind, rate of climb and acceleration, three key power readings can be computed and displayed in real time.

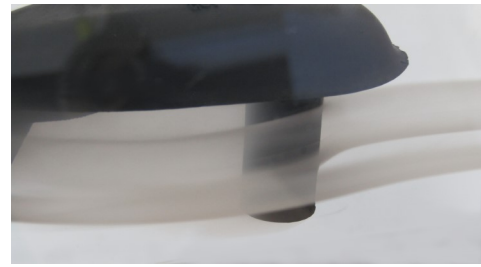


Reading environmental factors such as temperature, humidity and pressure allows WASP smart power meter to even more precisely calculate total exerted power. This is achieved by using cutting edge sensor fusion techniques and proprietary algorithms.

The WASP smart power meter has been extensively tested using our specially designed wind tunnel, and further tested on open road rides. Each sensor is individually calibrated and the calibration data is stored on the device.



Air flow over/under smart power meter



Air flow around sensing unit.

The accompanying android app collects data from the WASP smart power meter, carries out further computations and saves the results in files that can be later downloaded and analysed. The information is also smoothed and displayed allowing the rider to view performance in real time.

For those requiring advanced performance analysis, data files are created for use with commonly available software such as Training Peaks. A Dashware template is also provided for viewing your videoed rides.

Optional use of Bluetooth heart rate and cadence sensors allow athletes to take full advantage of sports performance monitoring.

For more information, visit www.thewaspworks.com

Preliminary Specifications

Parameter	Accuracy	Resolution
Wind direction ¹	$\pm 3.0^\circ$ @ $\pm 60^\circ$ forward motion	1.0°
Wind speed ¹	± 0.5 m/s from 2..15 m/s	0.1 m/s
Altitude ¹	± 0.5 m	0.1 m
Ground speed ²	0.05 m/s	0.1 m/s
Ground bearing ²	0.3°	0.1°
Temperature ³	$\pm 1.0^\circ$	1.0°
Relative Humidity ³	± 3.0 %rh	1.0 %RH
Atmospheric pressure ³	± 5.0 Pa	0.01 Pa
Weight	75 g (excluding mount)	107 g (including mount)
Size	120 x 55 x 60 mm	

1. Tests carried out @ 20°C, 60%RH 101,325 Pa,

2. GPS specifications

3. Barometric pressure sensor specifications

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Designed and produced by
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