

PerformanceBox

RLPB

Racelogic's **PerformanceBox** measures G-Forces, Speed, Lap & Split Times, Predictive Lap Time (Live comparison to last lap), 0-60, 0-100, Braking Distance and more.

All these parameters are logged to an SD memory card ten times per second for later review and comparison.

PerformanceBox contains a high-performance 10Hz GPS engine and integrated antenna, providing a wealth of information with very easy installation and a compact size.

The PerformanceBox gets all its information from GPS satellites, and needs only power from a vehicle. The operation is split up into six modes:



THE PERFORMANCE MODE

Acceleration: 0-60, 0-100

Shows time, G-force

Braking: 60-0, 100-0,

Shows time, distance, G-force

Distance: 60', 1/4mi, 1/2mi, 1mi

Shows time, trap speed

Live G-Meter: Accel, Decel, and cornering G-forces, with max G



THE SPEED DISPLAY

PerformanceBox also works as a highly accurate digital speedometer with compass, a handy feature for street driving.

POI files containing various Points of Interest can be loaded, and

PerformanceBox will display an icon when you are approaching a point of interest - great for locating spots such as speed cameras.



THE LAPTIMING MODE

Shows current lap, last lap, best lap

Split Times: Option to show split time or speed at a split point.

Virtual Start/Finish/Split Lines: Using GPS, there is no need for an external beacon or transmitter. Split lines can be easily saved and transferred.



THE PREDICTIVE MODE

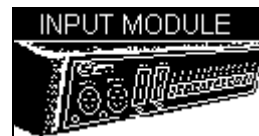
Enables you to graphically view your predicted lap time. Predictive lap timing works by saving your position around a circuit, every second. If the current lap is the fastest so far, then this positional data is saved as a reference.



THE POWER MODE

Wheel HP Calculation: Enter your vehicle's weight and run an acceleration to estimate wheel horsepower.

Flywheel HP Calculation: Perform a coast-down test to measure drag, and the PerformanceBox will calculate HP at the flywheel.



THE INPUT MODULE DISPLAY

An additional Input Module screen allows you to configure the incoming signals from an optional Micro Input Module.

A Micro Input Module enables logging and display of four analogue and one digital (RPM) input.

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Data Logging

Data logged to the SD flash card can be analysed in detail using the PC software provided. For convenience, the PerformanceBox can be connected to the USB port of a PC compatible computer to download information stored on the memory card. The data can also be read using a standard SD/MMC card reader. Lap time, acceleration and HP results can be written to the SD card as text files, for easy saving and transferring.

GPS Specifications

Velocity		Distance	
Accuracy	0.1 km/h (averaged over 4 samples)	Accuracy	0.05% (<50 cm per km)
Units	km/h or Mph	Units	Metres / Feet
Update rate	10 Hz	Update rate	10 Hz
Maximum velocity	1600 km/h	Resolution	1 cm
Minimum velocity	0.1 km/h	Height accuracy	10 Metres 95% CEP*
Resolution	0.01 km/h		

Absolute Positioning		Time	
Accuracy	3 m 95% CEP*	Accuracy	0.01 s
Update rate	10 Hz	Resolution	0.01 s
Resolution	1 cm		

Acceleration		Environmental and physical	
Accuracy	1%	Weight	219 grams
Maximum	4 G	Size	113 mm x 63 mm x 93 mm
Resolution	0.01 G	Operating temperature	-20°C to +50°C
Update rate	10 Hz	Storage temperature	-30°C to +80°C

Memory		Power	
Type	SD Card	Input Voltage Range	6 – 28 V DC
Recording time	Dependent on card capacity**	Power	Typically 100 mA

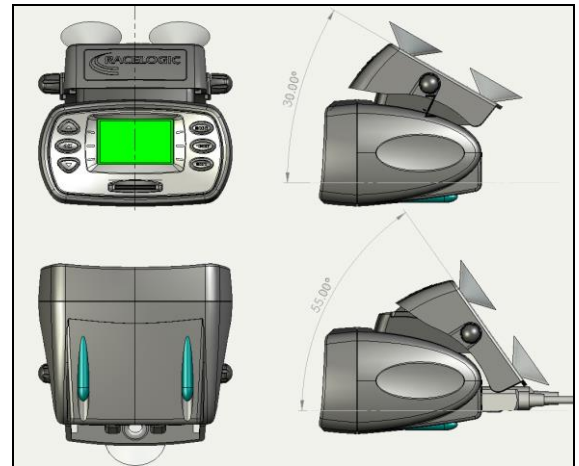
Heading		Definitions: * CEP = Circle of Error Probable. 95% CEP means 95% of the time the position readings will fall within a circle of the stated radius. ** Approximately 1.1 MB per hour used
Resolution	0.01°	
Accuracy	0.1°	

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Specification

Power	+12 V vehicle supply
Current	Approx. 100 mA
GPS Antenna	Internal Antenna
GPS Update Rate	10 Hz
External Antenna socket	Yes, for optional Active Antenna
Storage Memory	MMC/SD Flash Card (optional)
Display	Graphic LCD with backlight
PC Connection	USB Cable (optional)
Mounting Cradle	Suction mounting adjustable for windscreen angles of 30° to 55°
Operating Temperature	-20°C to +50°C
SD card	8 GB max, must be FAT file system



Package content

PerformanceBox is available in three versions. There are no differences in functionality between the three, only in which peripherals are included:

PB01 contains:

- PerformanceBox 10 Hz GPS data logger
- Windscreen suction mount and suction cups
- In-car power supply - connects to 12 V aux socket
- Software/manual CD

PB02 includes package content of PB01 plus:

- Mains power supply (UK/EU/JP/US/AU)
- USB cable for connection to PC
- SD Card

PB03 includes package content of PB02 plus:

- External Antenna
- Professional plastic carry case

Supplied software

Each PerformanceBox is supplied with a SD card containing the Performance Tools and Circuit Tools software. This software allows user to display and analyse the information recorded by the PerformanceBox.

Features include graphical display of logged parameters, full circuit plot, up to 6 overlaid comparison laps and detailed performance analysis.