

# Product manual

Do you know how hard you can kick or throw an object?

This Sports Speed Sensor can help you find out. Improve your skills or have fun testing yourself against your friends!

- Measure your shooting speed in sports such as football, handball, ice hockey, floorball, golf or tennis. Warning – never shoot directly at the device. Always have a net or other protection placed in front of the Sports Speed Sensor. Follow the instructions in the manual provided in the box.
- Lightweight and easy to use. Unlike most radar sensors, this product does not require a second person to point it at the object. Just place it behind the goal or net.
- Measures speeds up to 199 Km/h (or 150 mph)
- The tripod included makes it possible to place the sensor on many different surfaces. It also makes it possible to adjust the Sports Speed Sensor for different angles for a more accurate reading.
- The bright LED display is easy to read from a distance.
- Speaker with a pre-recorded voice announces the speed of your shot.
- Automatic battery saver – extends the life of batteries when the device is not in use.
- Requires five AA batteries. Please note that batteries are not included.
- Stores the speed of your last ten shots.

## Specifications

Still Mode speed range: five to 199 Km/h (three to 150 mph)

When in Still Mode, speeds lower than five km/h will not be recorded. For example, if a baseball player throws a ball, the sensor can record the ball's speed even it is lower than 40 km/h. However, in the Move Mode and the object's speed must be higher than 40 km/h in order for the sensor to record the speed.

Move Mode speed range: 40 to 199 Km/h (25 to 150 mph)

When in Move Mode, speeds lower than 40 km/h will not be recorded. This feature prevents the sensor recording the speed of the player rather than the object. For example, if a soccer player runs towards the ball to kick it, it is impossible to run faster than 40km/h. However, the ball's speed will be faster than 40km/h. If Still Mode is used, the sensor may record the player's movement speed, not that of the ball. Using Move Mode ensures that the sensor records the ball's speed only.

Distance from the sensor (goal or net) to the object or player: Approximately max. 12 metres (40 ft.) and min. one metre.

Battery requirement: Five AA batteries (not included)

Operating time: Voice Mode deactivated, up to 20 hours. Voice Mode activated, up to ten hours Operating temperature range: 32 – 104 °F/0 – 40 °C

## Battery installation

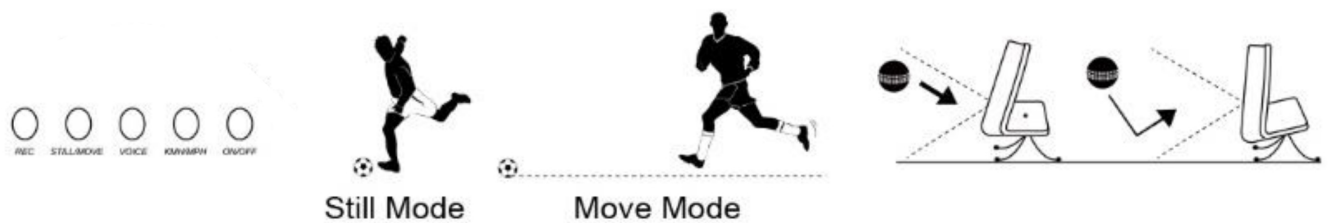
The Sports Speed Sensor requires five AA batteries to operate. Please note that batteries are not included. To install, open the back cover and carefully insert batteries as indicated. After inserting the batteries, replace the cover. Use a screw driver that fits the screws well. The device switches off automatically if no speed has been recorded in a five minute period.

## Instructions for use

1. Push "On/Off" button to start and stop the device.
2. Push "KPH or MPH" button to choose a unit of measurement. The LED light will indicate your choice.
3. Push "Voice" button to have the speaker announce the speed. Push again to switch off.
4. Push "Still/Move" button to choose a mode. When the display reads F0, it is in "Still Mode". When the display reads F1, it is in "Move Mode". Throwing a handball or making a tennis serve is considered "Still Mode" as the body movement speed is relatively low. Ice hockey shooting, a golf swing or kicking a football from running

is considered "Move Mode".

5. Push the "REC" button to view the last ten speeds recorded.



## Recommendations

1. Always place the Sports Speed Sensor behind a goal or net. Make sure that the target area, goal or net is in good condition and capable of protecting any surrounding objects.
2. Make sure that the distance between the Sports Speed Sensor behind the goal/net and yourself or the object is no more than 12 metres and no less than one metre for a more accurate reading.
3. Depending on what type of sport you wish to test, you may need to use the tripod to get a more accurate reading. However, the device can also be placed directly onto the ground or floor.
4. Always place the Sports Speed Sensor behind a protection of some kind. The product will break if hit by an object.
5. In order to achieve the most accurate result, we recommend adjusting the angle of the Sports Speed Sensor using the tripod so that the object flies in a direct line towards the sensor.
6. There are certain mathematical phenomena that could affect the accuracy of measurement. One of these is the Doppler effect. The Sports Speed Sensor will measure the relative speed of an object as it approaches the sensor. If the object is in a direct line with the sensor, the measured speed will be more exact. As the angle of incidence increases, moving either right or left of this direct line will cause the accuracy to decrease. The measured speed will become less accurate as you move off this centre line. The phenomenon is called the cosine effect. Please read the section on the cosine effect for further information. To improve accuracy, remember to keep the object in a direct line with yourself and not perpendicular.

## Cosine effect on target

The Sports Speed Sensor will measure the relative speed of an object as it approaches the sensor. If the object is in a direct line with the sensor, the measured speed will be more exact. As the angle of incidence increases, moving either right or left of this line will cause the accuracy to decrease. The measured speed will become less accurate as you move off this centre line. This phenomenon is called the cosine effect.

It is next to impossible to get a 100% accurate reading. However, the Sport Speed Sensor is sensitive and accurate enough for the relative results to stimulate improvement, identify differences and create high-performance incentives.

## Note:

1. It is important to take care to protect the Sports Speed Sensor when it is in use. Always place the sensor behind a net or goal to protect it from being hit by the object used.
2. Always make sure that the surroundings are safe when kicking, throwing or shooting an object. Never kick, throw or shoot an object when another person is at risk being hit.
3. This product can emit a radio frequency and may cause interference to radio communications. If the product does cause a disturbance to radio or television reception, which can be ascertained by turning the product off and on, we recommend attempting to correct this as follows:
  - Reorient or relocate the receiver of the radio or television
  - Increase the separation between the equipment and receiver
  - Turn off the Sports Speed Sensor or the radio/television

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.