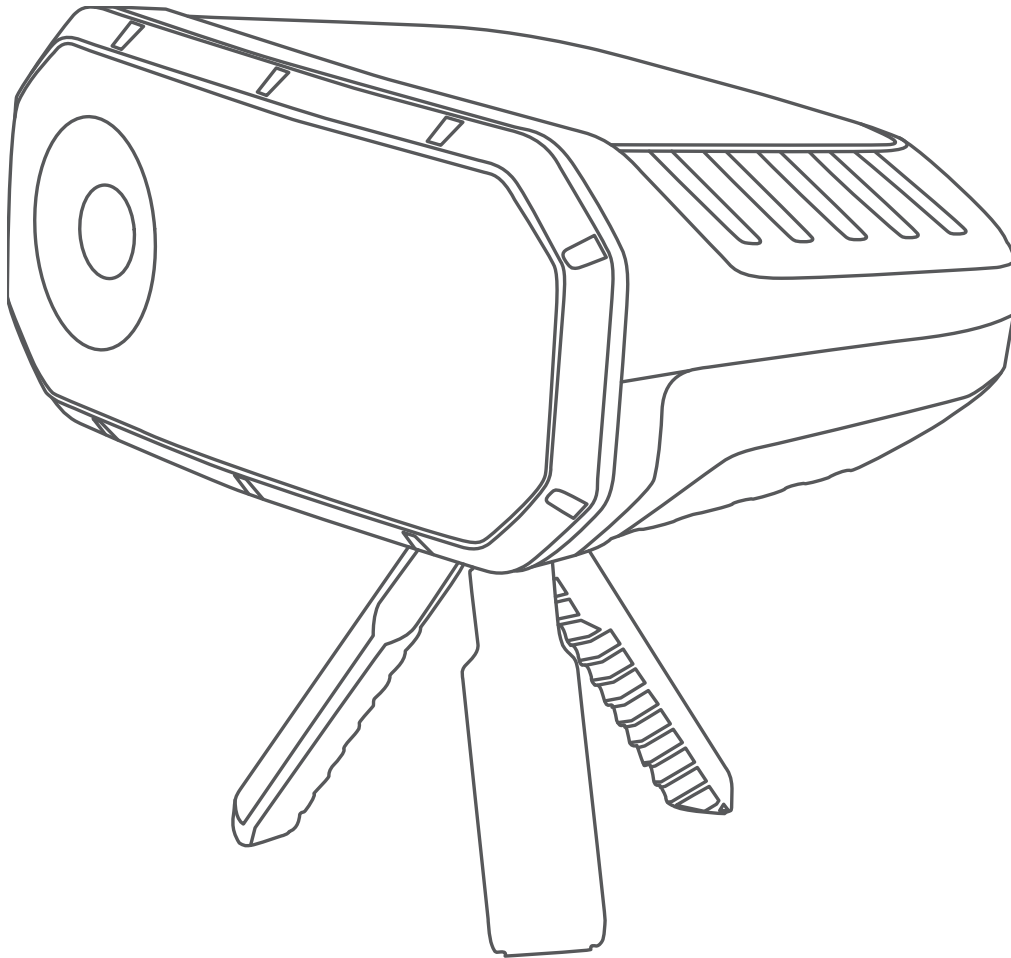


GARMIN®



**XERO® S1**

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**Owner's Manual**

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# Getting Started

## ⚠ WARNING

This device is intended to provide accurate aiming solutions based on calibrated measurements of current conditions only. Depending on your environment, conditions may change rapidly. Changes in environmental conditions, like wind gusts or downrange winds, may have an effect on the accuracy of your shot. Aiming solutions are suggestions only based upon your input into the device. Always allow a margin of safety for changing conditions and reading errors.

Always inspect your equipment before using a firearm. You are responsible for understanding and complying with any applicable regulations for using a firearm.

Always understand your target and what lies beyond your target before taking a shot. Failure to account for your shooting environment could cause property damage, injury, or death.

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

The Xero S1 Trapshooting Trainer helps you improve your trapshooting score by tracking a clay target and your shot using a combination of sensors. The device can track orange, green, and pink clays in both 108 mm and 110 mm sizes. Other sizes and colors are not supported.

**NOTE:** This device is intended to track one clay and one shot at a time. Doubles trap and trap games that allow multiple shots are not supported.

## Device Overview

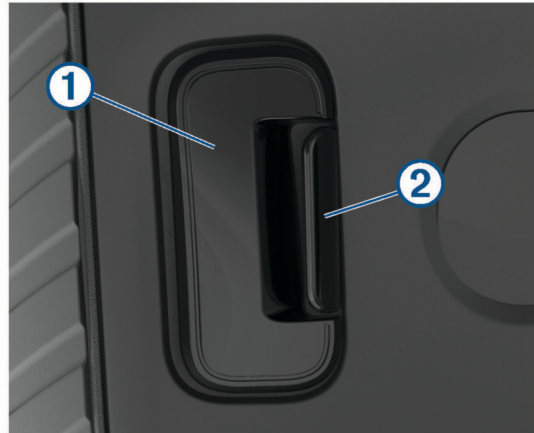


① Power button	Press to turn on the device. Hold to turn off the device.
② Micro-USB power and data port (under weather cap)	Connect the included USB cable to charge the device or transfer data using your computer.

③ Touchscreen	Swipe to scroll through features, data screens, and menus. Tap to select.
④ Protective cover	Remove before using the device. Replace when not in use.

## Tripod Adjustments

The tripod adjustment controls are located on the underside of the Xero S1 device.



① Tripod adjustment button	Adjusts the angle of the Xero S1 device on the tripod ball mount
② Tripod release lever	Opens the socket to install or remove the tripod ball mount

## Installing the Tripod

1 Screw the tripod ball mount ① onto the tripod assembly ②.



**NOTE:** You should tighten the tripod ball mount so it does not move during use. The tripod ball mount uses 1/4"-20 thread size and is compatible with most tripods. For best performance, do not raise the device beyond waist height or a total height of 1.2 m (4 ft.).

2 Completely depress and hold the tripod release lever ③.



- 3 While depressing the tripod release lever, insert the tripod ball mount into the socket ④.

**NOTE:** The ball mount should insert easily into the socket. If it is difficult to insert, you should confirm the tripod release lever is depressed completely.

## Adjusting the Tripod Angle

You can adjust the angle of the device on the tripod ball mount to align it with your target.

- 1 While holding the tripod adjustment button ①, tilt the device.



- 2 Release the tripod adjustment button to set the position.

## Charging the Device

### NOTICE

To prevent corrosion, thoroughly dry the USB port, the weather cap, and the surrounding area before charging or connecting to a computer.

**NOTE:** The device does not charge when it is outside the approved temperature range (*Specifications, page 7*).

- 1 Lift the weather cap ①.



- 2 Plug the small end of the power cable into the USB port ② on the device.
- 3 Plug the other end of the power cable into the included AC power adapter.
- 4 Plug the AC power adapter into a standard wall outlet.
- 5 Charge the device completely.

**NOTE:** A complete charge may take up to 3 hours.

## Turning On the Device

Press **POWER**.

The first time you turn on the device, you must follow the on-screen instructions to complete the setup process.

## Adding a Gun Profile

The device uses gun profiles with each shooting session. The gun profile you enter should match the firearm you are using for each session. You can add up to 10 gun profiles.

- 1 Select > **GUN PROFILES** > **ADD PROFILE**.
- 2 Select a field to enter information about your firearm.
- 3 Select .

## Activating a Gun Profile

Before you can activate a gun profile, you must add a gun profile (*Adding a Gun Profile, page 2*).

- 1 Select > **GUN PROFILES**.
- 2 Select a profile.
- 3 Select **ACTIVATE**.

## Trap Game Modes

The device includes various trap game modes to best suit your shooting needs.

**PRACTICE:** Practice mode lets you shoot a standard round of American trap, or work through a custom practice session. A custom practice session lets you use the device at any combination of stations. Each round consists of 25 shots. Feedback is provided after each shot.

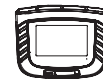
**LEAGUE:** League mode consists of a standard round of American Trap. Shooters take five shots from five stations. You can choose to receive real-time feedback or use the device for scorekeeping. When the device is configured for scorekeeping only, each shot is recorded for review at the end of a round.

**TOURNAMENT:** You can customize tournament mode to work with the rules of your tournament. If necessary, you can set the display mode to present feedback only when a round is complete.

**NOTE:** This product is not intended for double trap environments or games that allow multiple shots for each target.

## Starting a Trap Shooting Session

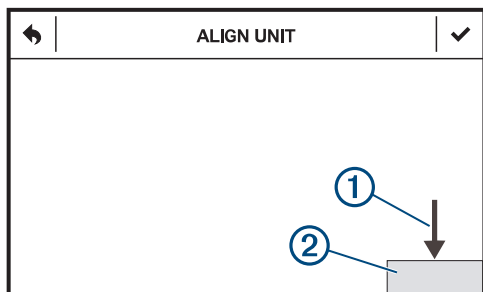
- 1 Position the device directly in front of you at your shooting station.



- 2 Stand directly behind the Xero S1 device with your front foot no more than 46 cm (18 in.) away from it.
- 3 Select **TRAP MODE**.
- 4 Select a trap game mode (*Trap Game Modes, page 2*).
- 5 If necessary, select a data field to change information about your shooting session.

**TIP:** Information entered on the setup screen is used to calibrate the device for your shooting session. You should verify all information is accurate.

- 6 Select ✓.
- 7 Select your current shooting station, and select ✓.
- 8 Align the device so the point of the arrow ① is centered above the trap house ②.



**NOTE:** The arrow and trap house could appear in different positions depending on your shooting station. You should verify the top of the alignment window is aligned with the top edge of the trap house.

- 9 Select ✓.
- 10 When the **READY** notification appears, begin your shooting session.

**NOTE:** The device will not detect a shot until the **READY** notification is on the screen. You should always confirm the device is ready before taking a shot.

After five shots, you are prompted to change shooting stations. Follow the on-screen instructions to set up your device at a different shooting station.

## Display Modes

Display modes configure how the device displays information between shots. When you start a shooting session, select **DISPLAY MODE**.


**FULL DETAILS:** Enables the device to keep score and display shot analysis information after each shot.

**SCOREKEEPER:** Enables the device to keep score, but it does not show shot analysis information between shots.

**BLACK BOX:** Disables the display of score and shot analysis information between shots. You can view your scorecard only after the round is complete.

## Changing the Shooting Station

If necessary, you can change stations manually.

- 1 During a shooting session, select .
- 2 Select a shooting station, and select ✓.
- 3 Follow the on-screen instructions to align the device for your shooting station.

## Upland Training Mode

Upland training mode lets you practice your skills with a compatible trap thrower in environments outside of the trap field. A standard round of upland shooting consists of 25 targets. Up to six shooters can compete against each other in a single round of upland shooting. Each shooter must stand behind the Xero S1 device when taking their shot.

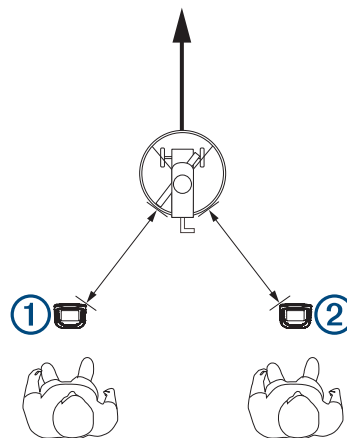
## Positioning the Device for Upland Training

### ⚠ WARNING

Never stand in front of the shooting position when operating this device or a trap thrower. Always understand your target and what lies beyond your target before taking a shot. Failure to account for your shooting environment could cause property damage, injury, or death.

Use upland training mode only with a remote-operated electronic trap thrower. Compatible trap throwers must be capable of launching clay targets in a consistent trajectory each time. This device does not support hand throwers or manually operated throwers.

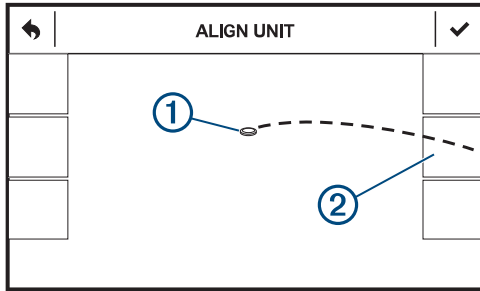
- 1 Position your trap thrower so it consistently launches clays into an area that is safe for shooting.
- 2 Place your Xero S1 device 1.5 m (5 ft.) away from the trap thrower in the 7 o'clock ① or 5 o'clock ② position.



- 3 Stand directly behind the Xero S1 device with your front foot no more than 46 cm (18 in.) away from it.

## Starting an Upland Training Session

- 1 Select **UPLAND MODE**.
- 2 Select the number of shooters.
- 3 Select the shooter who owns the device, and select ✓.  
**NOTE:** The device saves data only for the device owner to the Xero app and the device memory.
- 4 If necessary, select a data field to change information about your shooting session.  
**TIP:** Information entered on the setup screen is used to calibrate the device for your shooting session. You should verify all information is accurate.
- 5 Select ✓.
- 6 Position the device for an upland training session (*Positioning the Device for Upland Training, page 3*), and select ✓.
- 7 Verify the device is level and the trap thrower is not visible on the screen, and select ✓.
- 8 Launch a test clay to verify the clay target is visible on the screen for the entire flight, and select ✓.
- 9 Launch a test clay, observing where the clay target ① first appears on the screen.



10 Select the area at the edge of the screen ② where the clay enters the field of view.

**NOTE:** If the clay does not pass through one of the selectable areas, adjust the angle of the device until it does.

11 Select ✓.

12 When the **READY** notification appears, begin your shooting session.

**NOTE:** The device will not detect a shot until the **READY** notification is on the screen. You should always confirm the device is ready before taking a shot.

## Shot Analysis

After each shot, the device shows you an analysis of your shot. You can use this information to improve your accuracy and consistency. The analysis screen shows the location of the center of the shot pattern. The size of a shot pattern may vary depending on your firearm and choke diameter.



①	The location of the center of the shot pattern in relation to the clay
②	The distance from the clay to the center of the shot pattern
③	The direction of the shot pattern in relation to the clay
④	The distance of the clay at the moment it was broken
⑤	The number of clays hit out of the total number of shots
⑥	Shooting station information (trap mode) or shooter number (upland training mode)

## Reaction Time

Each time you take a shot, the device records your reaction time. Reaction time is measured as the amount of time the clay target is in the air before you take a shot. You can use this information to determine the most successful time to take a shot. You can view your reaction time statistics after each round (*Reaction Time and Shot Speed, page 5*).

## Adding a Shot

You can manually add a shot if the device did not detect it. The device does not record positional data for added shots.

1 Select ✎ > **ADD SHOT**.

2 Select a score.

## Changing the Score

You can edit the last shot if it was detected incorrectly.

1 Select ✎ > **CHANGE SCORE**.

2 Select a score (*Break Factor Score, page 4*).

## Reshooting

If necessary, you can reshoot your last shot. This can be useful if there was a malfunction with the trap thrower.

1 Select ✎ > **RESHOOT LAST SHOT**.

2 When the **READY** notification appears, take your shot.

## Exiting a Round

1 Select ✎ > **EXIT ROUND**.

2 Select an option:

- To pause the round, select **PAUSE**.
- To end the round, select **END**.

## Scores

### Break Factor Score

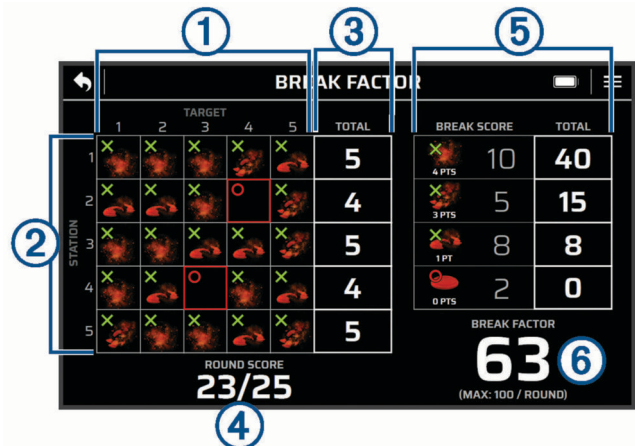
Each of your shots earns a point value based on how well you break a clay target. You can earn up to 100 points for each 25-shot round.

Trapshooting Value	Point Value
SMASH	4
CLEAN	3
CHIP	1
MISS	0

Upland Training Value	Point Value
CLEAN	4
BLASTED	3
WOUND	1
MISS	0

### Scorecards

You can review the scorecard at the end of each round. Scorecards are saved to the device memory automatically. You can select ▼ to view additional information about the round.



①	Targets
②	Stations
③	Total targets hit per station



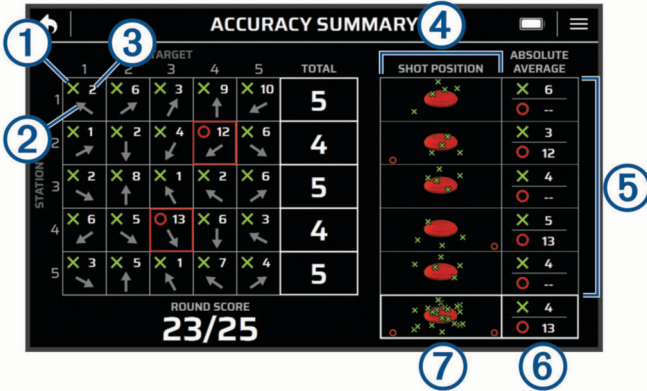
④	Round score
⑤	Score distribution
⑥	Break factor score

### Viewing Saved Scorecards

- 1 From the main menu, select ⌂.
- 2 Select a scorecard.

### Accuracy Summary

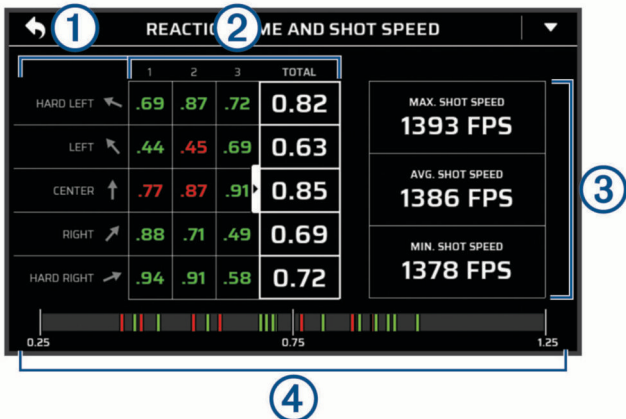
When viewing your scorecard, you can select ▼ to view the accuracy summary for the round. The accuracy summary shows the distance and direction of each shot in relation to the clay target. You can use this information to see your aiming trends throughout each round.



①	Indicates whether the shot was a hit or miss
②	The angle of the shot pattern in relation to the clay target
③	The distance of the center of the shot pattern from the center of the clay target
④	A graphical representation of each shot in relation to the clay target
⑤	The absolute average distance of the shot in relation to the clay target when hitting or missing
⑥	The absolute average distance of all shots in relation to the clay target for the entire round
⑦	A graphical representation of all shots in relation to the clay target for the entire round

### Reaction Time and Shot Speed

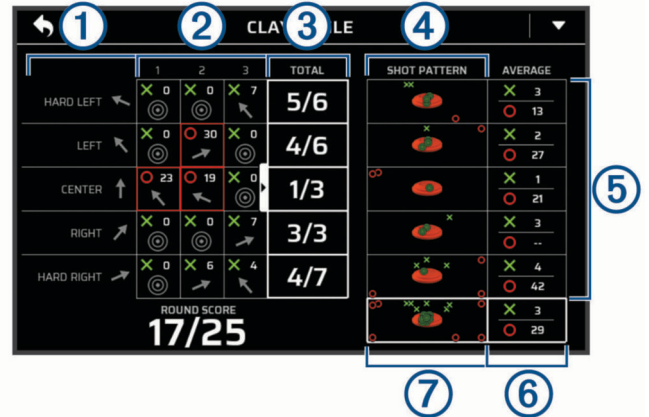
While viewing your scorecard, you can select ▼ to view reaction time and shot speed information for the round. You can use this information to see your success rate when you react at different times.



①	The angle of the clay
②	Reaction time
③	Maximum, average, and minimum recorded shot velocities
④	A graphical representation of hits and misses with different reaction times

### Clay Angle

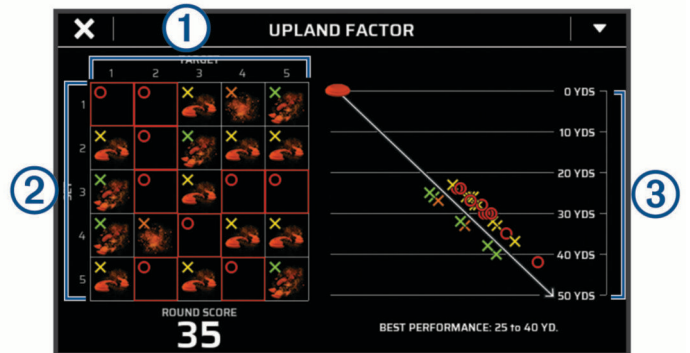
When viewing your scorecard, you can select ▼ to view clay angle information for each round. You can use this information to see your success rate and accuracy trends when the clay is thrown at different angles.



①	The angle of the clay
②	Clay targets hit or missed at different angles. You can tap the grid to view additional shots, if available
③	The number of hits out of the total number of clay targets at each angle
④	A graphical representation of each shot in relation to the clay target
⑤	The absolute average distance of the shot in relation to the clay target when hitting or missing
⑥	The absolute average distance of all shots in relation to the clay target for the entire round
⑦	A graphical representation of all shots in relation to the clay target for the entire round

### Upland Factor

When viewing your scorecard after an upland training session, you can select ▼ to view upland factor information for each round. The upland factor shows how you hit or missed at different distances. You can use this information to find your optimal distance for upland shooting based on your accuracy trends.




①	Target number
②	Set number
③	A graph of hits or misses at different distances

## Xero S App

The Xero S app stores information from each round for historical review and statistical analysis. You can download the Xero S app from the app store on your smartphone.


### Pairing Your Smartphone

To use the connected features of the Xero S1 device, it must be paired directly through the Xero S app, instead of from the Bluetooth® settings on your smartphone.

- 1 From the app store on your smartphone, install and open the Xero S app.
- 2 Bring your smartphone within 10 m (33 ft.) of your device.
- 3 On your Xero S1 device, select  > **PHONE**.
- 4 Verify the toggle switch is set to **ON**.
- 5 From the Xero S app, select **+**, and follow the on-screen instructions.

## Customizing Your Device

### Device Settings

From the main menu, select .

**GUN PROFILES:** Sets custom profiles for your firearm and ammunition (*Adding a Gun Profile, page 2*).

**PHONE:** Sets options for pairing the device with a compatible phone and the Xero app (*Pairing Your Smartphone, page 6*).

**SCREEN TIMEOUT:** Sets the amount of time before the screen turns off.

**BRIGHTNESS:** Sets the screen brightness.

**LED INDICATOR:** Enables or disables the status LED located below the device screen.

**SAVE POST-SHOT PICTURE:** Enables the device to take a picture of the clay target after a shot is detected.

**SAVE CLAY ANIMATION:** Enables the device to save an animation of the clay target after a shot is detected (*Viewing Scorecards, Pictures, and Animations on a Computer, page 6*).

**RANGE RENTAL RESET:** Resets the device to default settings and clears all scorecards.

**SYSTEM:** Sets system preferences (*System Settings, page 6*).

### System Settings

From the main menu, select  > **SYSTEM**.

**DATE AND TIME:** Sets options for the date and time.

**AUTO OFF:** Sets the device to turn off automatically after five minutes of inactivity.

**LANGUAGE:** Sets the device language.

**UNITS:** Sets the units of measure (*Changing the Units of Measure, page 6*).


**RESET:** Sets options for resetting the device settings, clearing scorecards, formatting the device storage, or returning the device to factory settings (*Resetting Data and Settings, page 7*).

**REGULATORY INFO:** Displays regulatory and compliance information.

**ABOUT:** Displays technical information about the device.

### Changing the Units of Measure

You can customize units of measure displayed on the device.

- 1 Select  > **SYSTEM** > **UNITS**.
- 2 Select measurement system.

## Device Information

### Product Updates

On your computer, install Garmin Express™ ([www.garmin.com/express](http://www.garmin.com/express)).

This provides easy access to these services for Garmin® devices:

- Software updates
- Product registration

### Connecting the Device to Your Computer

#### NOTICE

To prevent corrosion, thoroughly dry the USB port, the weather cap, and the surrounding area before charging or connecting to a computer.

- 1 Pull up the weather cap from the USB port.
- 2 Plug the small end of the USB cable into the USB port.
- 3 Plug the large end of the USB cable into a computer USB port.

Your device appears as a removable drive in My Computer on Windows® computers and as a mounted volume on Mac® computers.

### Viewing Scorecards, Pictures, and Animations on a Computer

Before you can record post-shot pictures and animations, you must first enable the device to save pictures and animations (*Device Settings, page 6*).

- 1 Connect the device to your computer using the included USB cable (*Connecting the Device to Your Computer, page 6*).
- 2 Open the device drive.
- 3 Open **Garmin > Results**.
- 4 Open the folder named with the date of your shooting session.
- 5 Open the folder named with the round number you want to view.
- 6 If necessary, open the folder named with your shooter number (upland mode only).
- 7 Select a picture, animation, or scorecard to view it on your computer.

**NOTE:** Pictures are saved in PNG format. Animations are saved in GIF format. Scorecards are saved in BMP format.

### Device Care

#### NOTICE

Do not store the device where prolonged exposure to extreme temperatures can occur, because it can cause permanent damage.

Never use a hard or sharp object to operate the touchscreen, or damage may result.

Avoid chemical cleaners, solvents, and insect repellents that can damage plastic components and finishes.

Secure the weather cap tightly to prevent damage to the USB port.

Avoid extreme shock and harsh treatment, because it can degrade the life of the product.

## Cleaning the Outer Casing

### NOTICE

Avoid chemical cleaners and solvents that can damage plastic components.

- 1 Clean the outer casing of the device (not the screen) using a cloth dampened with a mild detergent solution.
- 2 Wipe the device dry.

## Cleaning the Touchscreen

- 1 Use a soft, clean, lint-free cloth.
- 2 If necessary, lightly dampen the cloth with water.
- 3 If using a dampened cloth, turn off the device and disconnect the device from power.
- 4 Gently wipe the screen with the cloth.

## Cleaning the Camera Lens

### NOTICE

Avoid chemical cleaners and solvents that can damage plastic components.

You should clean the camera lens regularly to keep the camera lens free of dirt and debris.

- 1 Wipe the lens with a non-scratch lens cloth, optionally dampened with isopropyl alcohol.
- 2 Allow the lens to air dry.

## Specifications

Battery type	Rechargeable, built-in lithium-ion battery
Wireless frequency/protocol	2.4 GHz @ -0.74 dBm nominal 24 GHz @ 19.51 dBm nominal
Operating temperature range	From 0° to 60°C (from 32° to 140°F)
Charging temperature range	From 7° to 43°C (from 45° to 109°F)
Water rating	IEC 60529 IPX7 <sup>1</sup>

## Viewing E-label Regulatory and Compliance Information

The label for this device is provided electronically. The e-label may provide regulatory information, such as identification numbers provided by the FCC or regional compliance markings, as well as applicable product and licensing information.

- 1 Select .
- 2 Select **SYSTEM**.
- 3 Select **REGULATORY INFO**.


## Troubleshooting

### The device is showing incorrect distances

- When using trap mode, verify that no part of the trap thrower extends above the alignment window.
- When using upland mode, verify that no part of the trap thrower is visible on the device screen.
- Verify the clay target is visible on the screen during its entire flight path.
- Verify there are no obstructions in front of the device that could interfere with wireless frequencies, such as tall grass or branches.

## Resetting Data and Settings

The device offers several options for deleting your user data and resetting all settings to factory default values.

- 1 Select  > **SYSTEM** > **RESET**.
- 2 Select an option:
  - To reset all settings to default values, select **SETTINGS**.
  - To format and erase all user data stored on the device, select **FORMAT STORAGE**.
  - To delete all user data and reset all settings to factory default values, select **FACTORY RESET**.

## Getting More Information

You can find more information about this product on the Garmin website.

- Go to [support.garmin.com](https://support.garmin.com) for additional manuals, articles, and software updates.
- Go to [buy.garmin.com](https://buy.garmin.com), or contact your Garmin dealer for information about optional accessories and replacement parts.

<sup>1</sup>\*The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to [www.garmin.com/waterrating](https://www.garmin.com/waterrating).

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