PRODUCT MANUAL

IMPACT® 4000

BALLISTIC RAIL-MOUNTED LASER RANGEFINDER

TABLE OF CONTENTS

SPECIFICATIONS

DISPLAY SIZE	1.3" (33mm)
DISPLAY TYPE	LCD

	MAX REFLECTIVE RANGE	TREE RANGE	DEER RANGE
NORMAL MODE	Up to 2400 yds. (2195m)	Up to 2200 yds. (2012m)	Up to 1200 yds. (1097m)
ELR MODE	Up to 4000 yds. (3658m)	Up to 2500 yds. (2286m)	Up to 1500 yds. (1372m)

MINIMUM RANGE	5 yds. (4.5m)
ACCURACY	± 0.5 yds. @ < 100 yds.
	± 1 yd. @ ≥ 100 yds. & ≤ 1000 yds.
	± 3 yds. @ > 1000 yds.
MAXIMUM ANGLE READING	± 89°
BATTERY TYPE	CR123
LENGTH	4.6" (117mm)
HEIGHT	2.5" (64mm)
WIDTH	3.2" (81mm)
WEIGHT W/ BATTERY	16.0 oz. (453.6g)

IMPACT® 4000 BALLISTIC RAIL-MOUNTED LASER RANGEFINDER

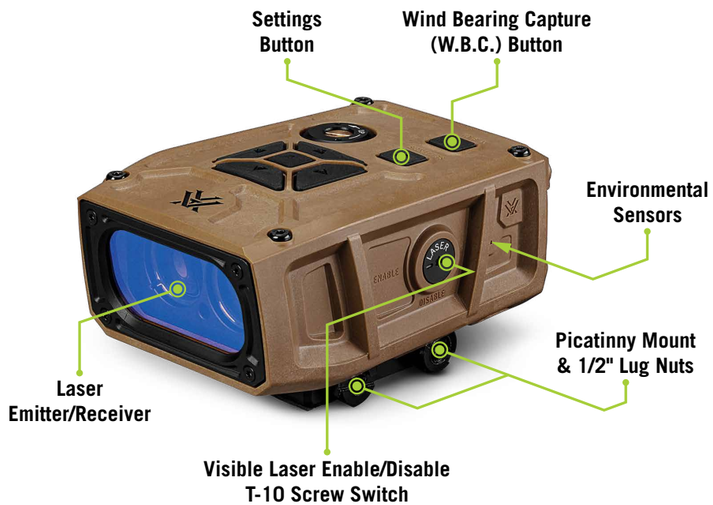
The Impact® 4000 takes the guesswork out of long-range shooting with quick, accurate ballistic corrections. Everything you need to generate point-and-shoot target solutions without ever coming off the gun. This advanced, rail-mounted laser rangefinder delivers key range, ballistic, and weather data via the integrated GeoBallistics® solver, on-board Environmental Sensors, and our patented Wind Bearing Capture Mode. Mounts to any picatinny-style rail or rings with a diving board mount.

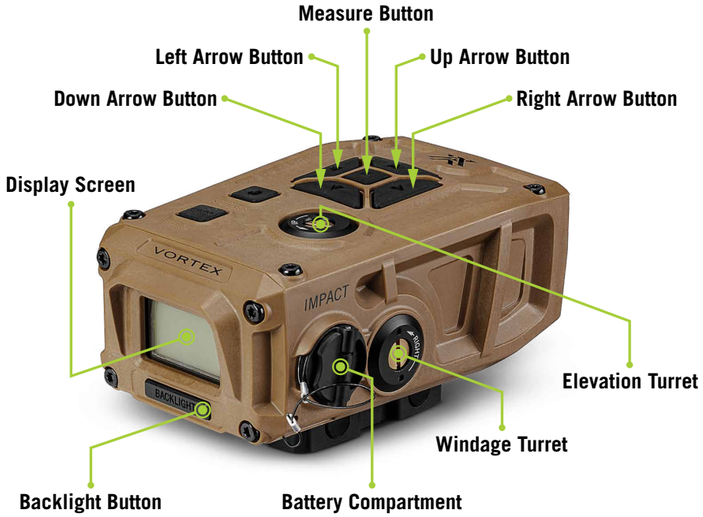
The Impact® 4000 pairs, via Bluetooth®, with your mobile device and the GeoBallistics® App. Scan the QR code below to download the GeoBallistics® App with your Apple or Android device.

The QR code below will also give access to instructional videos.

GeoBallistics®

Scan QR code to get started.





Images are for representation only. Product may vary slightly from what is shown.

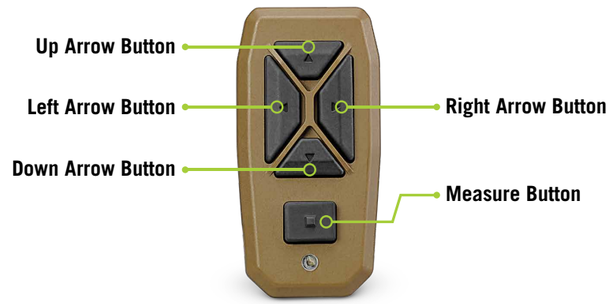
BUTTON NAVIGATION

ICON	NAME	FUNCTION
SETTINGS BUTTON		• Opens and Closes the Settings Menu
WIND BEARING CAPTURE BUTTON		• Opens and Closes the Wind Bearing Capture Screen
MEASURE BUTTON		• Power ON/OFF (Turn Impact ON/OFF) • Takes Range • Selects Menu Options
UP ARROW BUTTON		• Navigates Up in Menu Structure • Increases Manually Inputted Values
DOWN ARROW BUTTON		• Navigates Down in Menu Structure • Decreases Manually Inputted Values
LEFT ARROW BUTTON		• Navigates Back in Menu Structure • Navigates Left when Manually Inputting Values
RIGHT ARROW BUTTON		• Navigates Deeper into the Menu Options • Navigates Right when Manually Inputing Values
BACKLIGHT BUTTON	BACKLIGHT	• Turns ON/OFF Display Backlight

Note: To change the orientation of the Arrow Buttons on the Bluetooth® Remote, press and hold the button you wish to be "Up" and the "Measure" button for three seconds until the light blinks green.

IMPACT® 4000 BUTTONS

BLUETOOTH® REMOTE BUTTONS



BASIC OPERATION

Battery Installation and Replacement

To insert a new battery, flip up the finger tab on the Battery Cap and unscrew, counterclockwise, to remove. Insert a CR123 battery with the negative side (-) facing outwards. Reinstall the Battery Cap and ensure it is tightly closed.

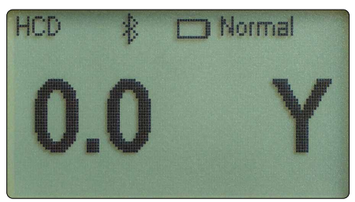
To insert a battery into the Bluetooth® Remote, utilize the multi tool to unscrew the Battery Cap counterclockwise, to remove. Insert a CR2032 battery with the positive side (+) facing outwards. Reinstall the Battery Cap, turning clockwise, and utilize the multi tool to ensure it is tightly closed.

Power Up

Once the battery is installed, the Impact® 4000 is in ready condition – the normal power-off condition when not ranging. To power up the Impact® 4000 from ready condition, press and release the “Measure” button. The default ranging screen, HCD, will display. To turn off the Impact® 4000, press and hold the “Measure” button for three seconds. The Impact® 4000 Auto-Shutoff default is three minutes. For instructions to change the Auto-Shutoff to one minute or disable Auto-Shutoff, see page 22.

Low Battery Icon

The Low Battery Icon displays once the battery reaches 25% life and stays on until there is no power or the battery is replaced.



Compass Calibration

Compass calibration is important for the accuracy of Wind Bearing Capture Mode. Read steps 1-5 of “Calibrating the Compass and Inclinometer” section before performing the following steps. The Impact® 4000 needs to be calibrated during initial setup and should be re-calibrated every time you significantly change location, typically 30 miles or more. Calibrate your Impact® 4000 outside and away from large metal structures or objects.

Scan the QR Code for links to video instructions on how to calibrate the Impact® 4000.

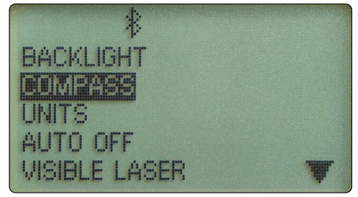
Scan QR code to get started.

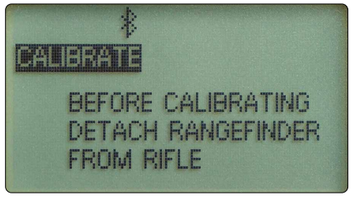
Important: Do not hit any buttons on the Impact® 4000 during this process unless specifically instructed to do so in the following steps.

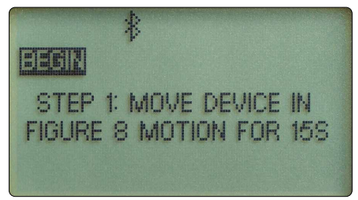
Important: Remove the Impact® 4000 from the rifle before beginning the calibration process.

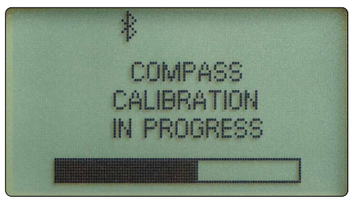
Calibrating the Compass and Inclinometer

To navigate to the Compass Screen, press the “Settings” button. Navigate to and select “Settings” to open the Settings Menu. Navigate to and select “Compass” to open the Compass Screen. To begin calibration, select “Calibrate” on the Compass Screen. Select “Begin” and complete the following steps when prompted.

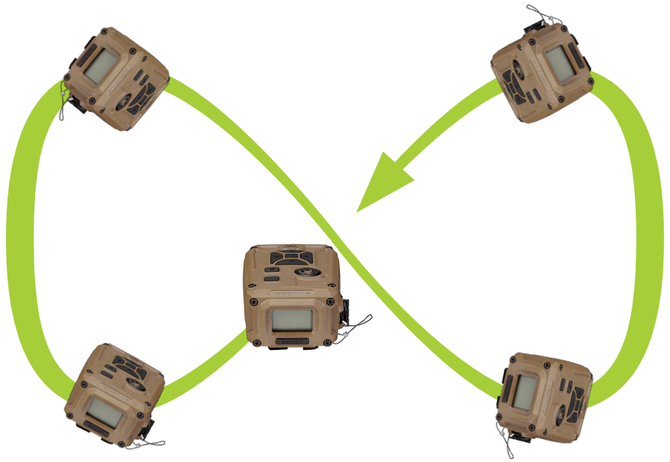








1. Rotate the rangefinder in a figure eight for 15 seconds. Press the “Measure” button to continue.



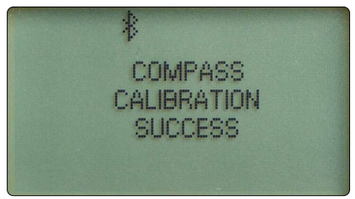
2. Rotate the rangefinder horizontally for 15 seconds. Press the “Measure” button to continue.

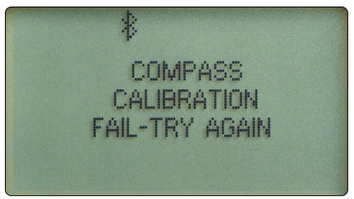
3. Rotate the rangefinder vertically for 15 seconds. Press the “Measure” button to continue.

4. Turn the rangefinder onto its left side and rotate it horizontally for 15 seconds. Press the “Measure” button to continue.

5. Turn the rangefinder onto its right side and rotate it horizontally for 15 seconds. Press the “Measure” button to complete.

The screen will read “Success” if the compass has successfully calibrated. If the screens reads “Fail - Try Again”, press the “Measure” button to restart the calibration and repeat this process until the Impact® 4000 is successfully calibrated.





MOUNTING

Once your Impact® 4000 has been calibrated it can be mounted. Prior to mounting the laser rangefinder ensure your riflescope is mounted and zeroed to your desired zero distance.

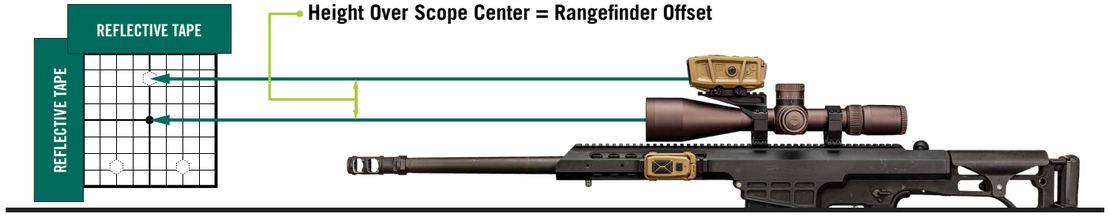
1. Mount your picatinny diving board mount or picatinny accessory rail and tighten to the manufacturer's torque specifications using a torque wrench.
2. Place the Impact® 4000 Picatinny Mount on the rail and position it so its placement does not interfere with the adjustment of the turrets.
3. Using the provided 1/2" Nut Driver Tool, tighten the 1/2" Lug Nuts to 45 in-lbs. Using a torque wrench is recommended if available.

Note: If the Impact® 4000 is mounted on the side of the gun, the screen will auto-rotate accordingly.

ZEROING

To ensure the accuracy of the Impact® 4000 range and ballistic solutions it must be zeroed parallel to your riflescope. This allows you to aim the device with the center of your reticle at all distances. To zero, follow the steps below:

1. Before starting, your riflescope must be properly mounted and zeroed. Your Impact® 4000 must be calibrated and then mounted.
2. Place the Small Reflective Target Sticker on the Alignment Target at the same measured offset that the Impact® 4000 is mounted from the center of the riflescope. Find common mounting offsets marked on the Alignment Target. Your offset may be different, it is good to measure left/right and up/down offset to the nearest 1/4" to verify the sticker placement.



Note: The Alignment Target grid consists of 1" squares for easy measurements.

3. Hang the Alignment Target, in a safe direction, at 50-100 yards using the Large Reflective Tape Strips. Use one piece of tape on the top of the target and one on the side of the target.
4. Turn the Visible Laser Switch on the side of the laser rangefinder to "Enable" utilizing the provided Torx® T-10 Tool.
5. Turn the Visible Laser ON from the Settings Menu. To do so, press the "Settings" button. Navigate to and select "Settings". Navigate to and select "Visible Laser" and select "ON".

   Note: While the Visible Laser is ON, all ranging and ballistic functions are disabled.
6. Utilize the Large Reflective Tape Strips to locate the target with the Visible Laser. The Visible Laser may not be well aligned to start.
7. Align your riflescope's crosshair to the center dot of the Alignment Target, and use the Flat Head Tool to adjust the Elevation and Windage Turrets to align the Visible Laser to the Small Reflective Target Sticker.
8. Your Impact® 4000 is now zeroed parallel to your riflescope.
9. Turn the Visible Laser Switch on the side of the laser rangefinder to "Disable" utilizing the provided Torx® T-10 Tool and turn the Visible Laser OFF from the Settings Menu following the instructions from Step 5.

Once the Impact® 4000 is calibrated, mounted, and zeroed it must be setup to your specifications to ensure accurate ballistic solutions for your shooting scenario.

SETUP MENU

Changing Modes on the Impact® 4000

The Impact® 4000 is factory set to the angle compensating HCD Range Mode, Normal Target Mode, .308 Winchester Profile, and Range Card OFF.

To Change Modes:

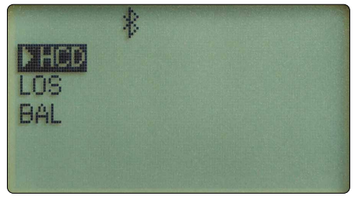
Press the "Measure" button to power on the unit, and then press the "Settings" button to open the Main Menu. Navigate to and select "Setup". In the Setup screen, you can access both Range and Target Mode Selection screens.

As you progress through the Mode Selection, you may exit at any time and save your settings by pressing the "Settings" button and the unit will then return to the Range Ready screen.

Range Mode Selection

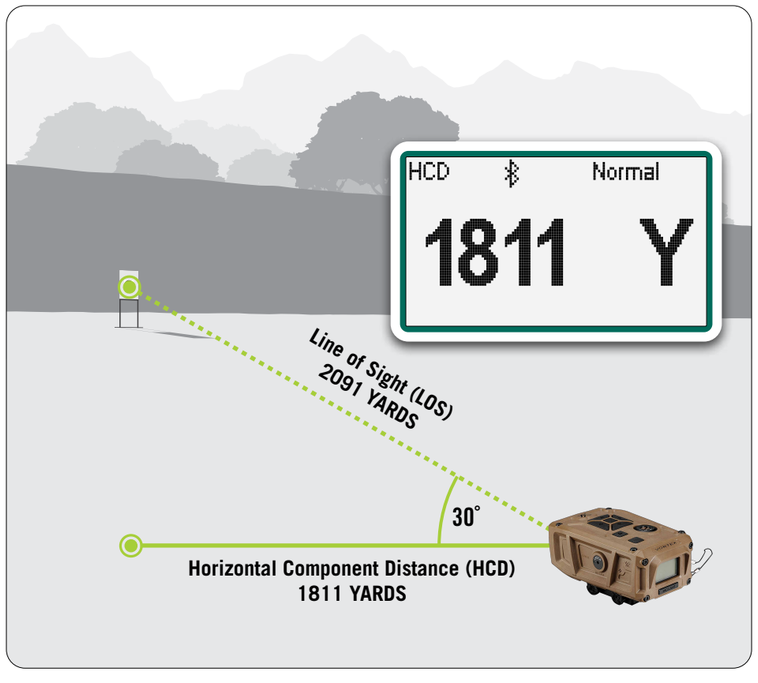
Choose between HCD, LOS, and BAL Modes

On the Setup Menu screen, toggle to and select “Range Mode”. You can choose between the HCD, LOS, and BAL displays. The selected mode will be designated with an arrow. Return to the Setup Menu screen and continue to Target Mode Selection.



HCD Mode

The Horizontal Component Distance Mode (HCD) will be your primary mode when not using the on-board ballistic solver. The yardage number displayed is the critical horizontal component distance. The displayed HCD yardage number is corrected for shot angle and needs no extra user input; shooters simply use the appropriate level ground bullet drop for the range displayed and shoot.

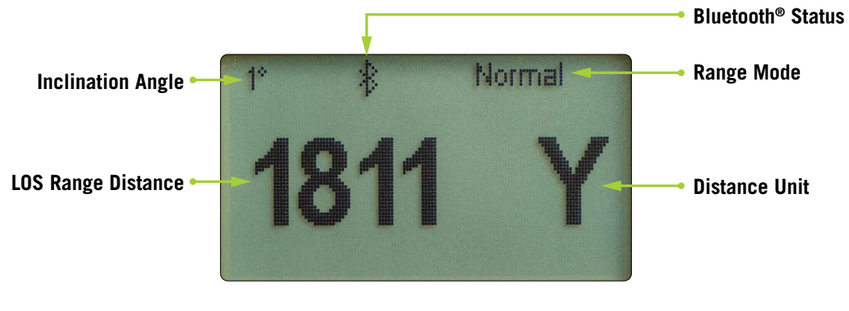


Note: To correctly account for wind, you need to know the line of sight distance to the target as it is based on how far the bullet travels to the target. This can be achieved using the LOS or BAL Mode.

LOS Mode

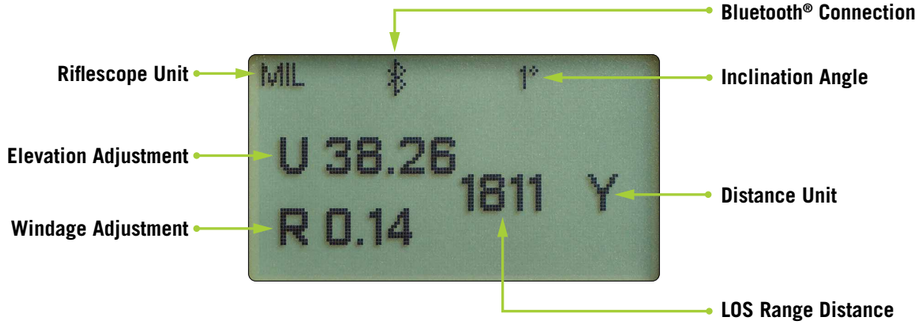
The Line of Sight (LOS) Mode is intended for rifle shooters who are using slope correcting ballistic drop data cards, ballistic cell phone applications, or other devices with ballistic programs and who are shooting at distances beyond 500 yards and with slopes greater than 15 degrees.

The range number displayed in LOS Mode is the actual line of sight range with no ballistic correction for slope. Most of the commonly used ballistic devices can provide independent slope correction for bullet drop data and require actual line of sight range input. Using the LOS range when calculating bullet wind drifts under these steep slope/long range conditions will provide a higher degree of accuracy than using the HCD range. While in LOS Mode, inclination angle of the target is also displayed on the screen. Downward angles are denoted with negative numbers.



BAL Mode

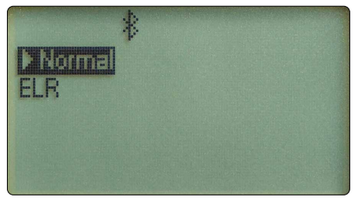
When in Ballistics (BAL) Mode, in addition to the range, the slope incline in degrees, riflescope units in MOA, MIL, or inches, and the ballistic correction based on the selected profile are also displayed. To use the on-board ballistic solver, you need to be in BAL Mode. When in BAL Mode, line of sight measurements are used to calculate ballistic solutions.



Target Mode Selection

The Impact® 4000 provides two target modes: Normal Mode and Extended Laser Range (ELR) Mode.

On the Setup Menu screen, toggle to and select “Target Mode”. You can choose between Normal and ELR Mode. The selected mode will be designated with an arrow. Return to the Setup screen and continue to Profile Selection.



Normal Mode

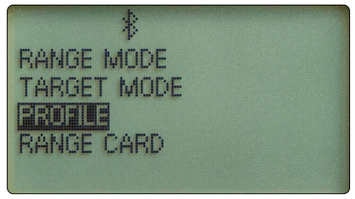
The Impact® 4000 comes preset to Normal Mode. This is the standard mode providing the target’s range with the strongest range result. Normal Mode is the recommended target mode for most situations.

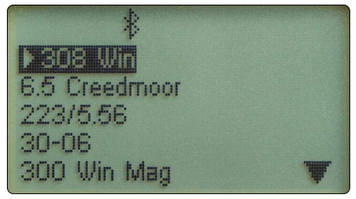
Extended Laser Range (ELR) Mode

This mode allows for ranging smaller, less reflective targets at extended distances. It is ideal for ranging when Normal Mode is unable to obtain a desired range. A longer response time may be required to receive the desired range.

Profile Selection

The Impact® 4000 comes with 10 common default Ballistic Profiles. The profiles can be used as is or customized to reflect your specific rifle and bullet combination.





The default profiles include .308 Winchester®, 6.5 Creedmoor®, .223/5.56, .30-06, .300 Winchester® Magnum, .270 Winchester®, 7mm Remington® Magnum, .243 Winchester®, .22-250 Remington®, and .22 Long Rifle.

On the Setup Menu screen, toggle to and select “Profile”. You can choose between the 10 ballistic profiles. The selected profile will be designated with an arrow.

To edit a profile, ensure it is designated with the arrow and then select it. You are able to customize the Bullet information, Rifle information, or Rename the profile.

Bullet Information Screen

To edit the Bullet information, use the up and down arrows to toggle to and select “Bullet”. To edit a field, when highlighted, press the “Right Arrow” button to select the data and use the up and down arrows to modify the data. Press the “Left Arrow” button to return to the field list. Return to the previous screen to continue to the Rifle information.

Caliber (in):
The bullet’s diameter in inches.

Weight (gr):
The bullet’s weight in grains.

Length (in):
The bullet’s length in inches.

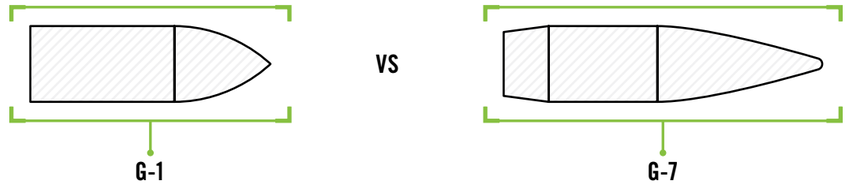
Ballistic Coefficient:
The bullet’s ballistic coefficient as it correlates to the drag function.

Note: Find these values on the ammunition’s box or on the manufacturer’s website.

Drag Model – G1 vs G7

This information may be printed on the box if you are using manufactured bullets. If you are using custom loads, use the Drag Model listed on the packaging for your bullet. If the Drag Model is not listed on the packaging, this information can usually be found on the bullet/ammo manufacturer’s website.

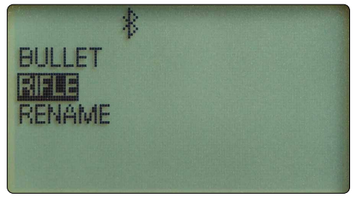
In general, G1 is better for flat-based bullets typically used with pistols and muzzleloaders. G7 is more common and better for longer, boat-tailed bullets which are common for centerfire cartridges.



Note: Drag Model options: Multi G1, Multi G7 or CD, can be imported from the GeoBallistics® App. When using these the ballistic coefficient will read “MULTI” or “1” and the Drag Model will read “MULTI G1”, “MULTI G7” or “CD” based on your selection.

Rifle Information

To edit the Rifle information, toggle to and select “Rifle”. To edit a field, when highlighted, press the “Right Arrow” button to select the data and use the up and down arrows to modify the data.



Sight Height

Height from the center of the rifle bore to the center of the optic. The measurement units can be set to standard (inches) or metric (centimeters) in the Settings Menu.

Zero Range

The distance at which you have zeroed your rifle. The measurement units can be set to standard (yards) or metric (meters) in the Settings Menu.

Barrel Twist Rate

Barrel Twist Rate is the distance covered for each revolution of the bullet within the barrel. For example, if your barrel is denoted as “1:8”, this means the bullet will complete one full rotation every eight inches and you should enter “8” into this space. This information may be marked on the rifle barrel, or on the manufacturer’s website. Update the Twist Rate to match your rifle.

Note: If your barrel has a left-hand twist, you must enter the Twist Rate via the GeoBallistics® App and denote it with a negative or minus sign. A negative sign will then be displayed before the Twist Rate on the device. If you cannot find the twist rate for your barrel, we recommend inputting 10.

Muzzle Velocity

Muzzle Velocity (MV) is the projectile’s speed as it leaves the muzzle. You can find this information on the packaging from most ammunition manufacturers, or their websites. We highly recommend that you use a chronograph to verify this information. The measurement units can be set to standard (ft/s) or metric (m/s) in the Settings Menu.

An MV Temp Table can be input via the GeoBallistics® App, see page 56 for instructions. If an MV Temp Table is active, the calculated MV will be displayed with a T preceding it. Ex: T2743.

Sight Units

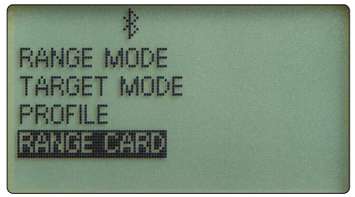
Choose the Sight Units you would like to have your drop chart displayed with MRAD, MOA, or inches. This information will be based off the angular unit of measurement your riflescope’s turrets and reticle are laid out in.

Renaming a Ballistic Profile

To rename the Ballistic Profile, toggle to and select “Rename”. Use the left and right arrow buttons to select which character to change and the up and down arrow buttons to toggle through the keyboard options. After renaming the profile, return to the Setup screen.

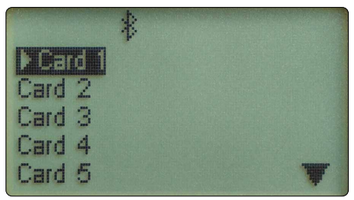
Range Cards

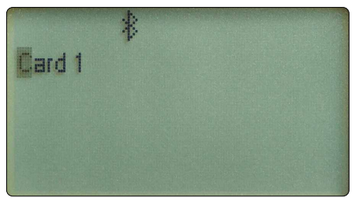
A Range Card can help provide quick and accurate ballistic solutions that can be used again and again. The Impact® 4000 has the capability to store 10 Range Cards. Within each Range Card, 10 targets can be stored.



To build a Range Card, navigate to and select “Range Card” on Setup Menu. On the Range Card screen, select “ON” to turn on the Range Card feature.

To select which Range Card you’d like to edit, toggle to and select “Card Manager”. Select which card you’d like to edit. To rename the Range Card, press the “Right Arrow” button and select “Rename”. Use the left and right arrow buttons to select which character to change and the up and down arrow buttons to toggle through the keyboard options. After renaming the Range Card, press the “Settings” button to exit the menu and return to the Range Ready screen.

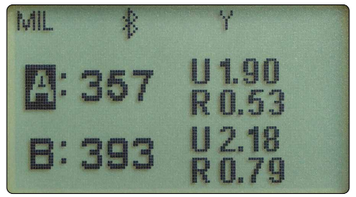




Building a Range Card

Line up your riflescope to your target and press the “Measure” button to range. The measured range will show up as A. You can change this range until you are satisfied with the distance by pressing the “Measure” button to range again or changing it manually by pressing the “Right Arrow” button to select the range and adjust the distance using the up and down arrow buttons. If you are satisfied with your range, move onto the next target by pressing the “Down Arrow” button to move to letter B. Continue these steps until all the targets are entered.

HCD MODE

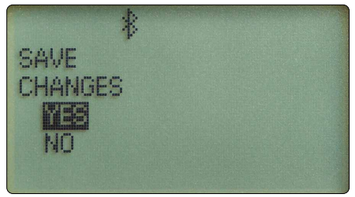


BAL MODE

LOS MODE

To save the Range Card, press the “Settings” button and select “Yes” when asked to save changes.

Note: The Range Card will save the target distance, inclination, and direction. If you update your wind or weather parameters, your range card ballistic solutions will automatically update accordingly.



To turn OFF the Range Card, press the “Settings” button to return the Main Menu, select “Setup”, toggle to and select “Range Card” and toggle to and select “OFF”. Return to the Main Menu and continue to adjust the Impact® 4000 Settings.

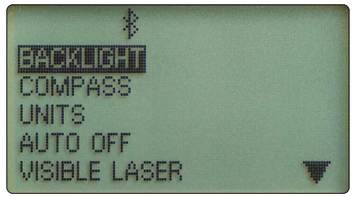
SETTINGS MENU

Changing Settings on the Impact® 4000

The Impact® 4000 is factory set to Brightness Level 3, Standard Units, Auto-Shutoff set to 3 minutes and the Visible Laser set to OFF.

To Change Settings:

Press the “Settings” button to open the Main Menu. Navigate to and select “Settings” to open the Settings Menu. In the Settings Menu, you can access Backlight, Compass, Units, Auto-Shutoff, and Visible Laser settings. This menu is also where you can reset your device to factory settings.

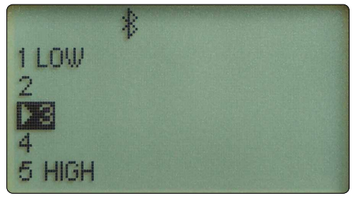


Backlight Selection

Choose Between Five Brightness Settings

The Impact® 4000 features five Backlight brightness settings. Toggle through the five settings and select your desired brightness level. Return to the Settings Menu.

Note: This adjusts the brightness of the Backlight. To turn the Backlight ON/OFF, press the “Backlight” button under the Display Screen on the Impact® 4000.

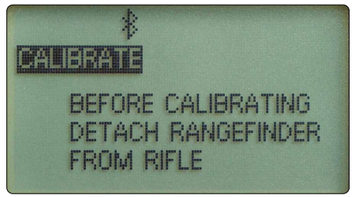


Compass

The Impact® 4000 compass needs to be calibrated during initial setup and should be re-calibrated every time you significantly change location, typically 30 miles or more. Calibrate your Impact® 4000 outside and away from large metal structures or objects.

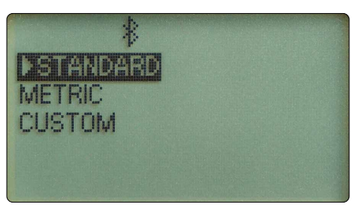
For instructions on how to calibrate your Impact® 4000 see the “Calibrating the Compass and Inclinometer” section on pages 9-11.

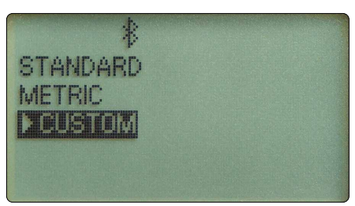
Note: You need to remove the Impact® 4000 from your rifle before calibrating.



Unit Selection

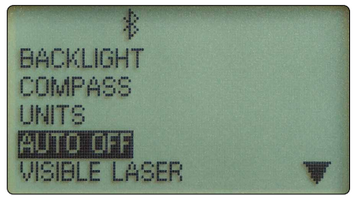
The Impact® 4000 offers the selection of standard or metric units. This will set all applicable Riflescope Units, Weather Units, and Distance Units to that unit of measure. To customize each unit individually, navigate to and select “Custom”. Press the “Right Arrow” button to open the Custom screen, where you can edit Riflescope Units, Weather Units, and Distance Units independently. To change the unit of measure, navigate to the unit you’d like to change, press the “Right Arrow” button to select the current unit of measure, then use the Up and Down Arrow Buttons to toggle through the unit options. Once you have selected your desired unit of measure, press the “Left Arrow” button to return to the list. Repeat until all units are set to your preferences. Return to the Settings Menu to adjust the Auto-Shutoff settings.

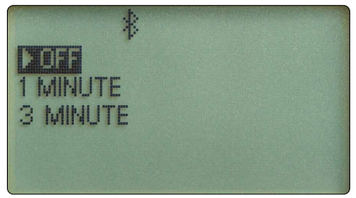




Auto-Shutoff Selection

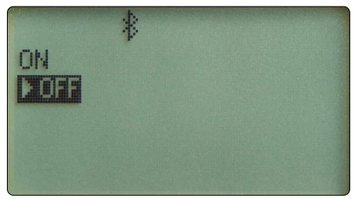
The Impact® 4000 offers two Auto-Shutoff options: 1 minute and 3 minutes. It is also possible to turn off the Auto-Shutoff feature. Once you have made your desired selection, return to the Settings Menu.





Visible Laser Selection

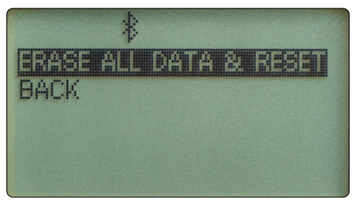
The Impact® 4000 comes equipped with a Visible Laser to be used for zeroing the rangefinder. The Visible Laser Switch must be enabled on the side of the rangefinder using the included Torx® T-10 Tool to function. If the Visible Laser is ON, the red alignment laser will turn on. The use of the Visible Laser is only permitted for zeroing. No range or ballistic solutions can be calculated while the Visible Laser is ON. Return to the Settings Menu. Turning the Visible Laser Setting to OFF will re-enable ranging functions of the device.



Reset Selection

The Reset screen can be used to restore the Impact® 4000 to factory settings. Select “Erase All Data & Reset” to reset the device. Press the “Setting” button to return to the Main Menu and continue on to Connected Devices.

Note: This will clear your range cards, ballistic profiles, and all other selections made. If you wish to save a copy of your range cards and profiles prior to performing this step, make sure to sync your device with the GeoBallstics® App.



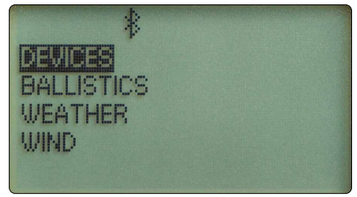
CONNECTED DEVICES

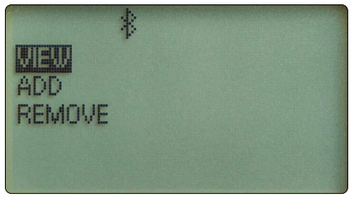
The Impact® 4000 can connect with the GeoBallistics® App for quick customization and to the included Bluetooth® Remote for easy adjustments without leaving the shooting position via the Vortex Relay™ Network. To manage connected devices, navigate to and select “Connected Devices” from the Main Menu.

Note: The Impact® 4000 can operate as a stand-alone device. Connection to other devices such as the GeoBallistics® App and the Bluetooth® Remote are not required.

Devices

The Devices screen allows you to view, add, or remove devices and connect your Bluetooth® Remote to the devices you’d like for it to control.





View

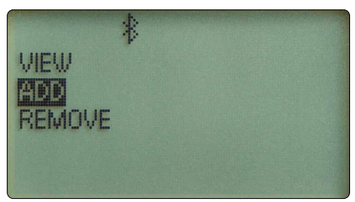
On the View screen, you can view which devices are currently connected via the Vortex Relay™ Network. To show up on the network, the devices must be previously added and turned on. When you select a device, you can see the latest firmware and software information by pressing the “Right Arrow” button.

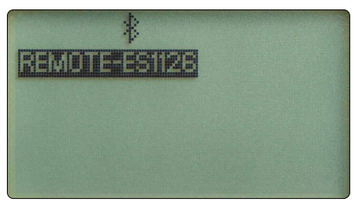
Note: A network is a group of devices and mobile applications that communicate to each other. Devices can only be connected to one network at a time.

Note: On the Range Ready screen, the Bluetooth® icon will change to a number to indicate how many devices are on the network. A “1” indicates that the Impact® 4000 is the only device on the network. A “4” would indicate that three other devices are on the network with the Impact® 4000.

Add

The Add screen is where you can add devices to your network. The Impact® 4000 will automatically find all compatible devices on the Vortex Relay™ Network that are turned on and within Bluetooth® range (approximately 30 feet) that are not already connected to another network. Select the device from the list that you wish to add. When the new device joins the network, if the profiles or range cards are different, you will be asked on both devices which device's information should be used. Repeat to add any additional devices.



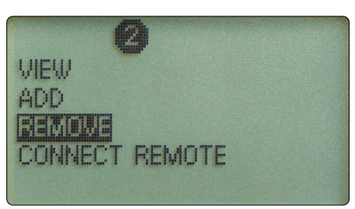


Note: When adding a Bluetooth® Remote to your Impact® 4000 device, it will automatically pair and control your device.

Remove

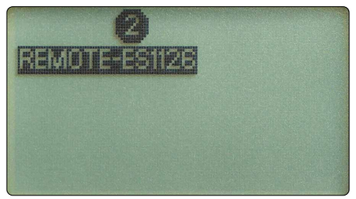
The Remove screen is where you can remove devices from your network. Select the device you wish to remove from the network.

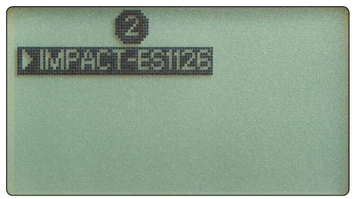
Note: You can remove your Impact® 4000 device from your network. You would need to do this if you are shooting with a friend and wish to join their network or if you sell or lend your Impact® 4000 to someone else.



Connect Remote

The Connect Remote screen is where you can control which device your Bluetooth® Remote is paired to. Before doing so, you must make sure to add the Bluetooth® Remote to your network via the Add screen. Select your remote, and then select which device you'd like to connect your remote to. Connected devices will be denoted with an arrow. Return to the Connected Devices Menu to select which source you'd like to provide which information.





Blinking Red

- Not On a Network

Blinking Orange

- On a Network
- Not Connected to a Device

Blinking Green

- On a Network
- Communicating With a Device

Note: When the Bluetooth® Remote blinks red, it is not on a network. When it blinks orange, it is on a network, but not connected to any other device. When it blinks green, it is on the network and communicating with another device on the network.

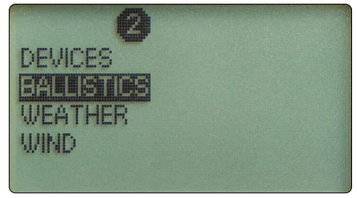
Note: You are not able to connect the remote to control the GeoBallistics® App.

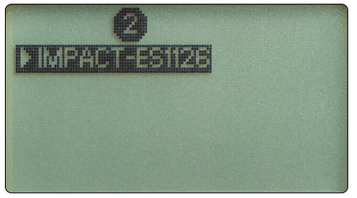
To manually disconnect the Bluetooth® Remote from the Impact® 4000, but keep it on the network, press and hold the remote's "Left Arrow" button and "Right Arrow" button together for three seconds.

The Bluetooth® Remote can also be disconnected from the network manually by pressing and holding the remote's "Up Arrow" button and "Down Arrow" button together for three seconds.

Ballistics

Once you have connected your devices to your network, select "Ballistics" on the Connected Devices Menu and select which device's on-board solver you'd like to provide ballistics. The selected device will be denoted with an arrow.



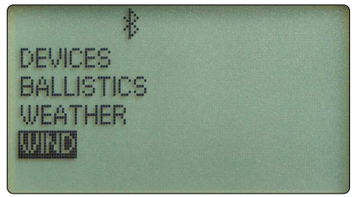


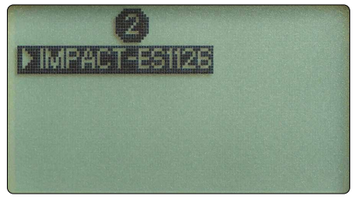
Weather

Once you have connected your devices to your network, select “Weather” on the Connected Devices Menu and select which device you’d like to provide weather information. The selected device will be denoted with an arrow. Weather can be sourced from the Impact® 4000 on-board Environmental Sensors or from the GeoBallistics® App. The GeoBallistics® App can source weather from local weather stations or third-party weather meters.

Wind

Once you have connected your devices to your network, select “Wind” on the Connected Devices Menu and select which device you’d like to provide wind information. The selected device will be denoted with an arrow. Wind data can be manually inputted via the Impact® 4000 or the Geoballstics® App. The GeoBallistics® App can source wind data from local weather stations or third-party weather meters.





WEATHER INFORMATION

When calculating wind/drop solutions in BAL Mode, it will be necessary to account for wind and weather for the most accurate solution.

The Impact® 4000 comes with on-board Environmental Sensors to capture the following data:

- Direction (compass)
- Temperature (thermometer)
- Angle of Incline (inclinometer)
- Pressure (barometer)
- Humidity (hygrometer)

Access Wind, Weather and Wind and Target Direction screens by pressing the “Wind Bearing Capture” button and using the Measure button to toggle through screens.

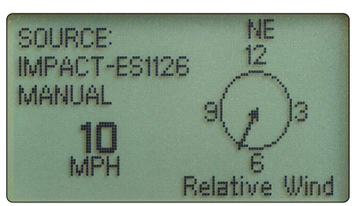
Wind Screen

Wind Bearing Capture

The Impact® 4000 uses the patented Wind Bearing Capture to manually input wind speed and direction. The Impact® will keep track of wind direction regardless of the direction the user is facing.

Note: Be sure that the Impact® 4000 has been properly calibrated (see pages 9-11) before attempting to use the Wind Bearing Capture Mode.

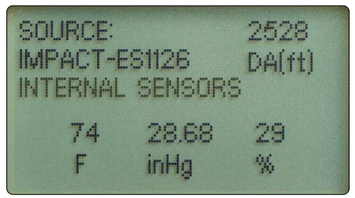
Establishing the Wind Bearing and Speed:



1. Press the “Measure” button to turn on the Impact® 4000.
2. Press the “Wind Bearing Capture” button to enter the Wind screen. The wind speed and direction will be displayed. The displayed direction is the direction the Impact® is pointed.
3. To manually adjust the wind speed, press the “Up Arrow” button to increase the wind speed or press the “Down Arrow” button to decrease the wind speed.
4. To manually change the wind direction, press the “Left Arrow” button to move the wind direction indicator counterclockwise or press the “Right Arrow” button to move the wind direction indicator clockwise. The wind indicator moves in 15-degree increments. Orient the wind direction indicator to represent the direction the wind is coming from. (ie: indicator direction is the wind direction).

Note: If calibrated, the wind direction indicator will rotate as the device rotates regardless of the direction the user is facing.

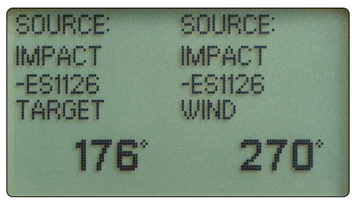
Weather Screen



Temperature, Pressure, Humidity, and a calculated Density Altitude are displayed on the Weather screen. The Weather screen can be accessed from the Wind screen by pressing the “Measure” button once. The values for Temperature, Pressure, and Humidity can be measured by the on-board Environmental Sensors or entered manually. They can also be provided by the GeoBallistics® App. When provided by the app, these values are not adjustable via the Impact® 4000. Use the up and down arrows to toggle between “Internal Sensors” and “Manual”. When in Manual, you can manually change the weather information by pressing the “Right Arrow” button to toggle to the desired variable and then pressing the “Up Arrow” to increase or “Down Arrow” button to decrease the values.

Note: Density Altitude is calculated from the provided weather information and cannot be directly entered.

Wind and Target Direction Screen



The Wind and Target Direction screen displays both the direction of the target from the shooter along with the direction of the wind in degrees. This screen also lists the source of each of these data points. This screen can be accessed via the Wind Bearing Capture Menu by pressing the “Measure” button twice.

Example: A target due north of the shooter is displayed as 0˚. Wind blowing from east to west will display as 90˚.

GENERAL INFORMATION FOR GEOBALLISTICS® APP

Go to your device's app store and download the GeoBallistics® App.

From the main screen of the GeoBallistics® App, you will see these main icons:

ICON	NAME	FUNCTION
	Account	On the Account page you may log into your account to access your rifle profiles and range cards.
	App Settings	On the App Settings page you may customize your app experience by selecting preferences, units, and more.
	Rifles	On the Rifles page you may create, edit, delete, and sort rifle profiles to be used for your ballistic solutions.
	Atmospherics	On the Atmospherics page you may view and input weather data, connect to a weather meter, or select a nearby airport to pull weather data from.
	Range Cards	On the Range Cards page you may save your range card data created in the GeoBallistics® App.
	Manage Devices	On the Manage Devices page you may connect compatible devices to the GeoBallistics® App and edit your preferences with each device.

Set Up

Be sure you have reviewed the Impact® 4000 Basic Operation before reading the GeoBallistics® App Section.

Go to your device's app store and download the GeoBallistics® App.

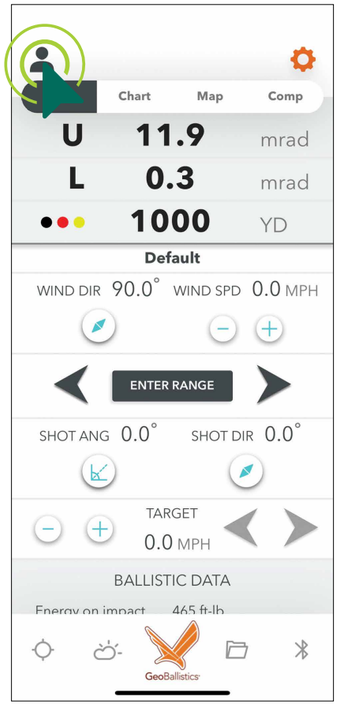
GeoBallistics®

Scan QR code to get started.

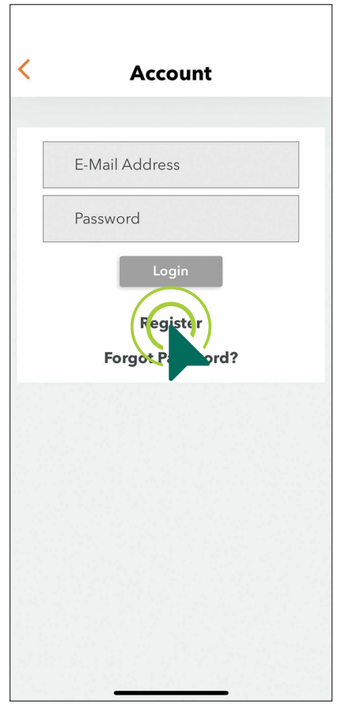
Creating an Account

Although it is not required, we recommend creating an Account on the GeoBallistics® App. Doing so will ensure your data is backed up should anything ever happen to your device or app.

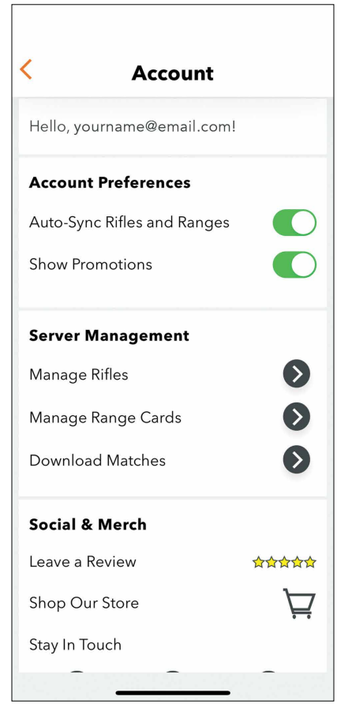
1. To create an account, select the icon from the top left corner of the home screen.
2. Click the "Register" link from the Account Page.
3. Once you've registered and created an Account, you will be able to manage your Account preferences.



STEP 1



STEP 2



STEP 3

NAVIGATING THE GEOBALLISTICS® APP

Across the top of the main screen of the GeoBallistics® App, there are four tabs: HUD, Chart, Map, and Comp. See the App Settings Menu section on page 45 for more information regarding how to select which tab is your default when first opening the GeoBallistics® App.

HUD Tab

From the HUD tab, you will see your ballistic solution displayed in either MOA, MRAD, or inches based on your preferences.

You will also see wind and shot information based on data collected from either the Impact® 4000, GeoBallistics® App, a third-party weather meter, or selected airport data. Here you may also click any buttons below each data point to capture measurements from your mobile device. Wind speed can be changed manually. Below is the Enter Range button. This button can be used manually enter range from the app and push it to the Impact® 4000. Clicking either left or right arrow next to this button will manually change the range value.

For Target, you may select the speed and direction of a moving target to add this data to your ballistic solution.

On the bottom of the screen is Ballistic Data. This is based on information from your selected rifle profile. See page 49 for more information about rifle profiles.

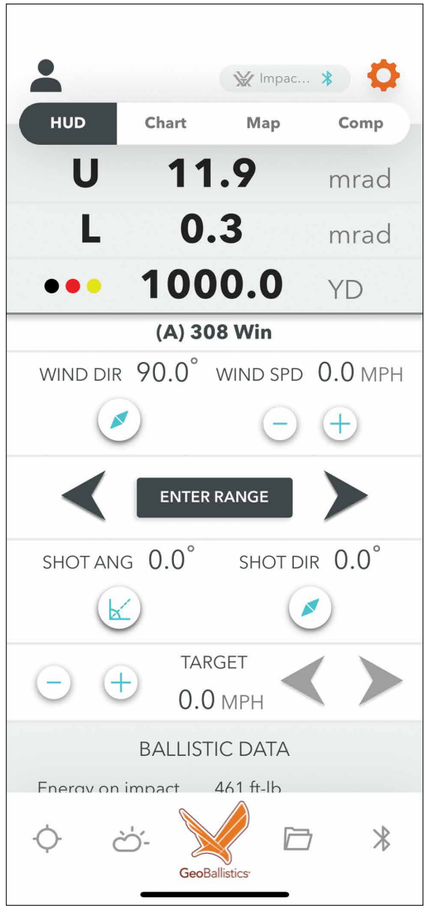


Chart Tab

From the Chart tab, you will see data for shot Angle, Direction, and Range. Here you may also manually input this data to change your ballistic solution.

Angle°

This displays your shot angle in degrees from the horizon (ex: level = 0°, straight up = 90°).

Direction°

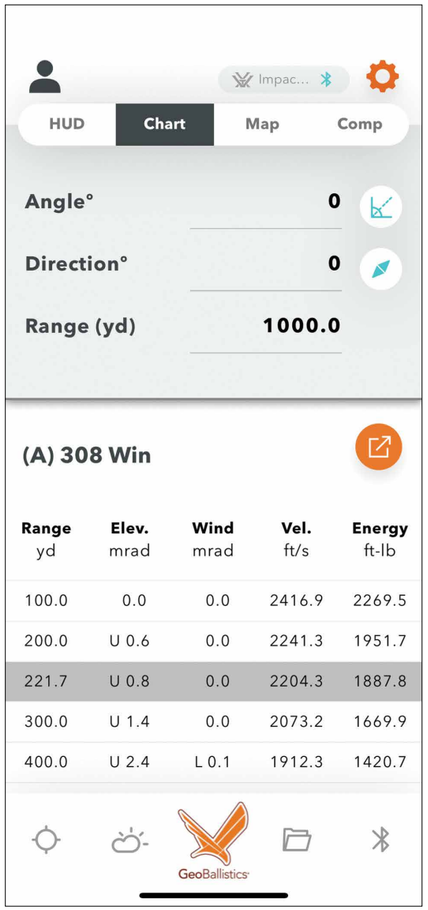
This displays shot direction in degrees from due north (ex: north = 0°, east = 90°, south = 180°, west = 270°).

Range

This displays the ranged distance in either yards or meters.

You will also see a chart containing ballistic information based on your selections. You can modify the range increments and units on the App Settings page. The gray, red, and yellow highlighted rows are GeoBallistics® Overlays. See the GeoBallistics® Overlays section on page 55 for more information.

You may export the chart data using the button.



Map Tab

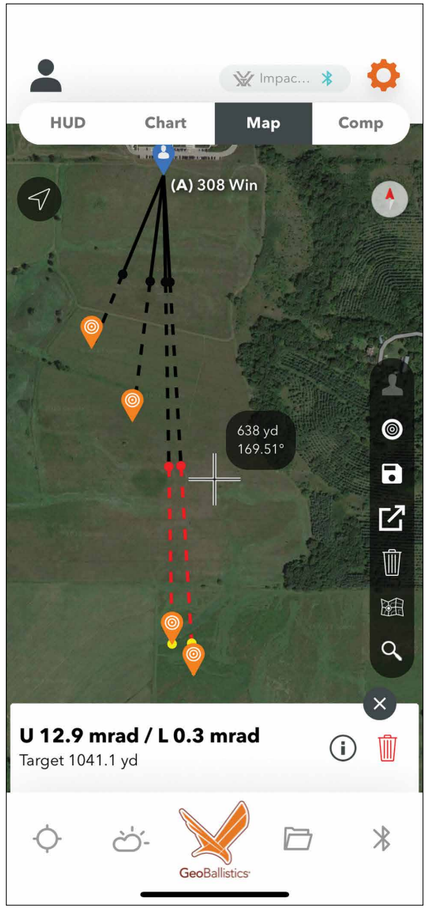
From the Map tab, you may locate your current position by clicking . For best results, make sure the Impact® 4000 is calibrated correctly. See page 9-11 for instructions on how to calibrate your Impact® 4000.

While on this tab, you can use the shooter icon to drop a pin to denote your location and the target icon to drop pins for your target's locations. You may also use the Impact® 4000 to range a target, which will then drop a pin on the map representing that target's position.

Use your finger to move the cursor around the map screen. You will be shown the distance and direction of that point from your position if you have dropped the shooter position pin. If you have dropped target pins, you may click on each one to see the calculated ballistic solution on the bottom of the screen.

If your target position is far enough to show your GeoBallistics® Overlays, they will appear using a black dashed line (Max Vital Range), red dashed line (Energy Threshold), and yellow dashed line (Velocity Threshold).

You can save the pin positions to your range card folders by clicking floppy disk icon or export them to your Comp tab by clicking export icon . You can also change the map view to either topographical, road view, hybrid view, or satellite view by pressing the map icon .



Comp Tab

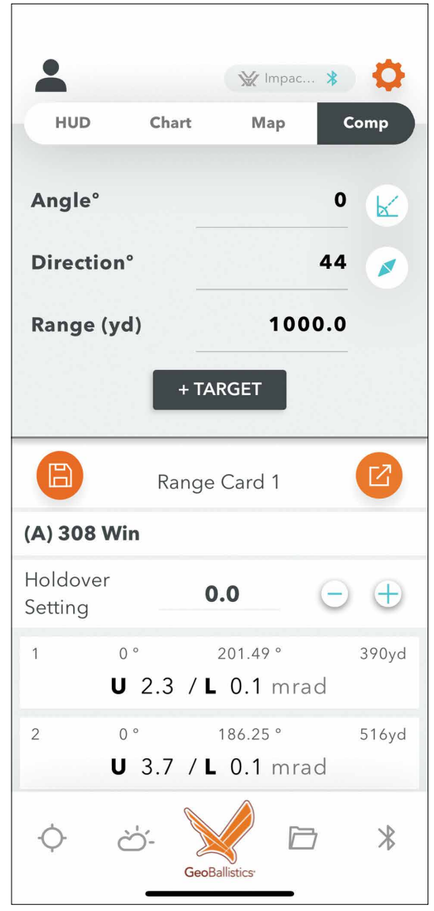
From the Comp tab, you may manually enter shot Angle, Direction, and Range. This information can also be populated with data from the Impact® 4000.

On this screen, you can begin building out your range card. Make sure you have the desired rifle profile selected from the Rifles page. The selected profile is shown next to the (A-J) designation depending on how your profiles are sorted.

Once the desired values for shot angle, shot direction, and range are populated, press the +TARGET button to save the ballistic solution for that situation. You will see the ballistic solution appear at the bottom of the screen.

Repeat this process for additional targets if desired. By clicking the "Edit" button, you can modify the input parameters for an individual target entry by clicking the box next to the entry or all entries at once by clicking the box next to "Select All Targets". You may also re-order the target entries by either pressing the up and down arrows or by typing the order number in the space provided. Click "Save" to save your changes. You can also click "Clear" to delete all target entry data.

Once you have at least one target entry saved, you may modify the Holdover Setting by clicking or . This setting can be used to set the elevation value on your reticle that you plan to use as a holdover. For example, if you add a suppressor to a gun that is already zeroed and it changes your point of impact by .5 MRAD in the downward direction but do not want to re-zero your optic, you can change your Holdover Setting to - .5 to update your drop chart to reflect the change in zero.



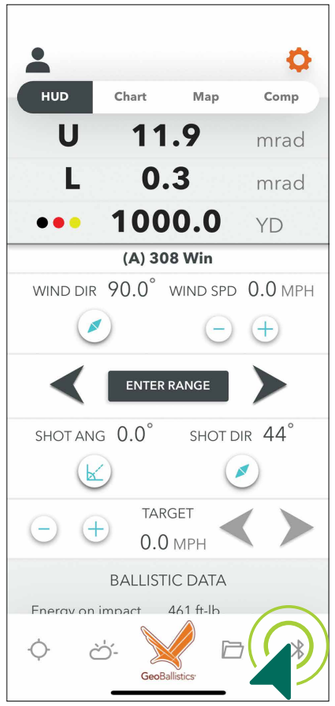
Once you've created your range card, you can save the data to your Range Card folders by clicking save or export the data to several options by clicking . Range Cards saved to the Impact® 4000 Range Cards Folder will be automatically synced with your Impact® 4000.

PAIRING THE IMPACT® 4000 AND THE BLUETOOTH® REMOTE TO THE GEOBALLISTICS® APP

To pair your Impact® 4000 with your mobile device, ensure the Bluetooth® on your mobile device is turned on and the GeoBallistics® App has been allowed access to your mobile device's location services.

Pairing the Impact® 4000 to the GeoBallistics® App

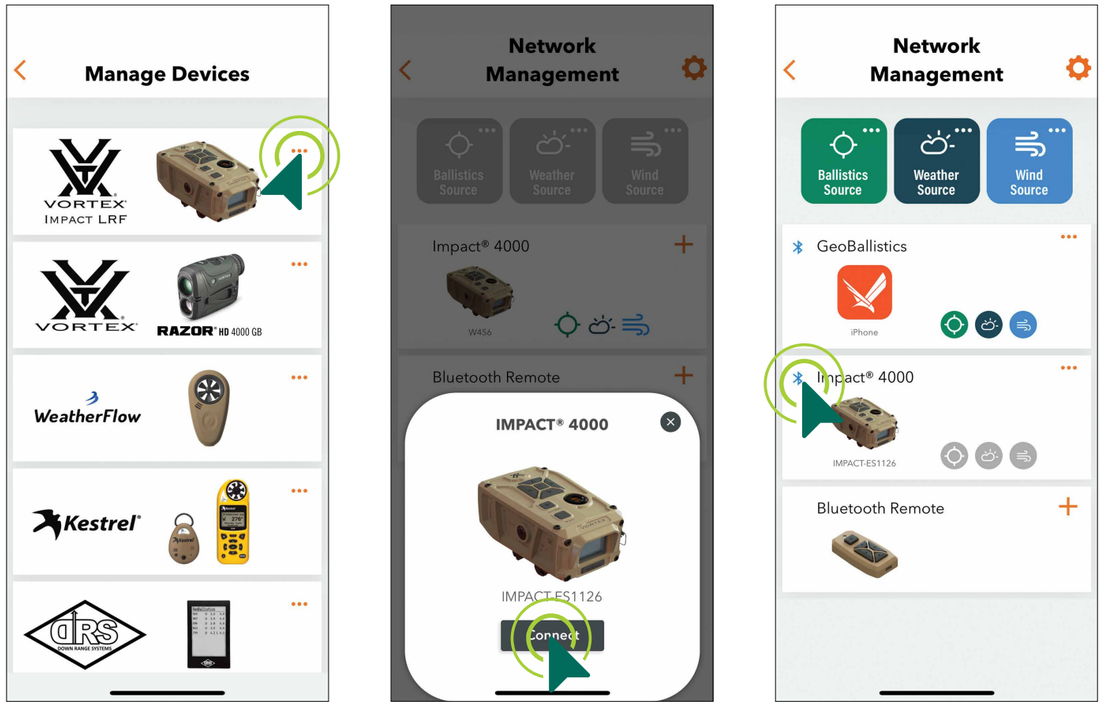
1. Power on the Impact® 4000.
2. Open the GeoBallistics® App and select the Bluetooth® symbol in the lower right-hand corner of the screen.



3. Select the Impact® 4000 by pressing the ellipsis ••• .
4. You should be prompted with an Impact® 4000 popup. Click "Connect".

Note: If not prompted, press the + icon next to the Impact® 4000. Tap on your Impact® 4000 referencing the last four digits of the serial number on the bottom of your Impact® 4000. This will connect the unit to the GeoBallistics® App.

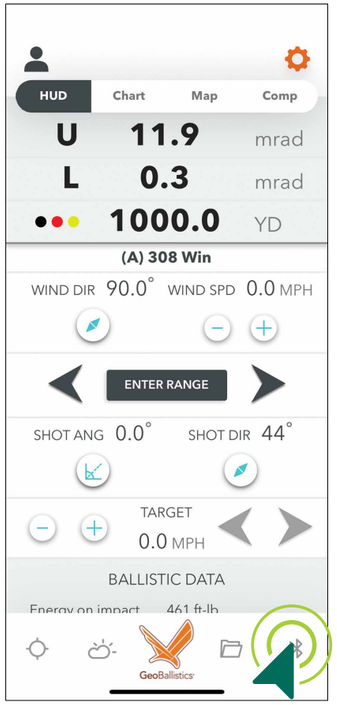
Note: If the Impact® 4000 is already on a network, you will need to either join the existing network with the GeoBallistics® App or remove the Impact® 4000 from the network it is on.



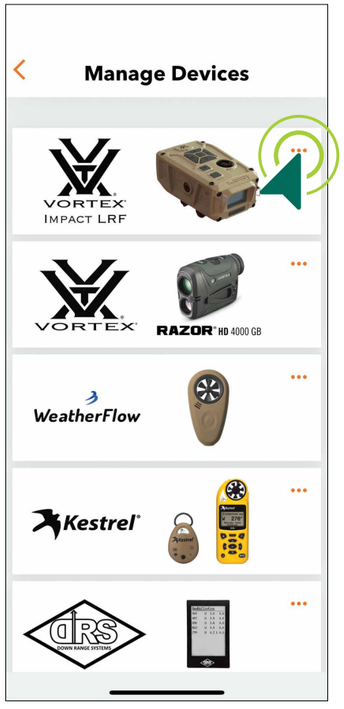
The GeoBallistics® App and the Impact® 4000 are now connected. This is denoted by a Bluetooth® symbol next to the Impact® 4000 on the GeoBallistics® App.

Pairing the Bluetooth® Remote to the GeoBallistics® App

1. Power on the Bluetooth® Remote.
2. Open the GeoBallistics® App and select the Bluetooth® symbol in the lower right-hand corner of the screen.

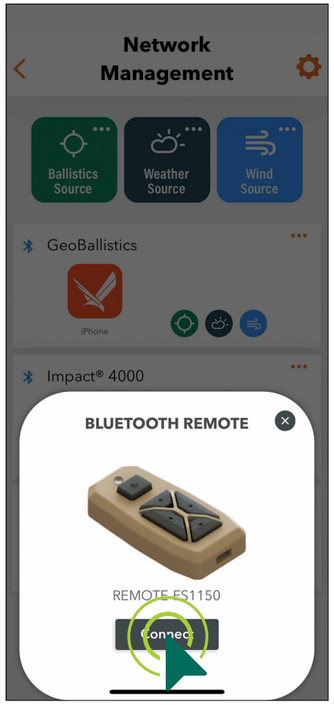


3. Select the Impact® 4000 by pressing the ellipsis •••.

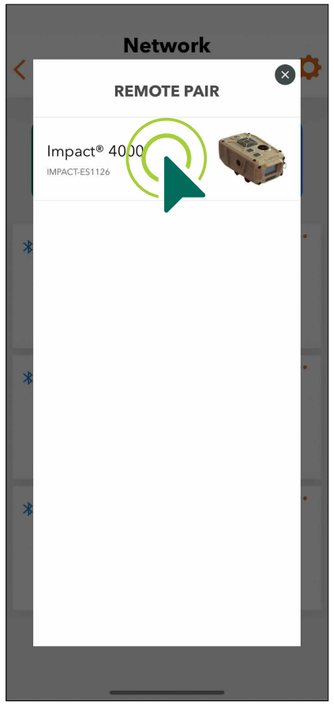


4. You should be prompted with a Bluetooth® Remote popup. Click “Connect.”

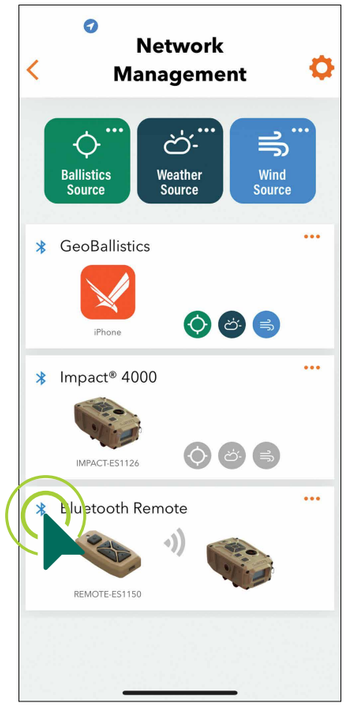
   Note: If not prompted, make sure your remote is on. If still not prompted, press the + icon next to the Bluetooth® Remote. Tap on your Bluetooth® Remote referencing the last four digits of the serial number on the bottom of your remote. This will connect the unit to the GeoBallistics® App.



5. You will then be prompted to select which device you’d like to connect the remote to. Select Impact® 4000.

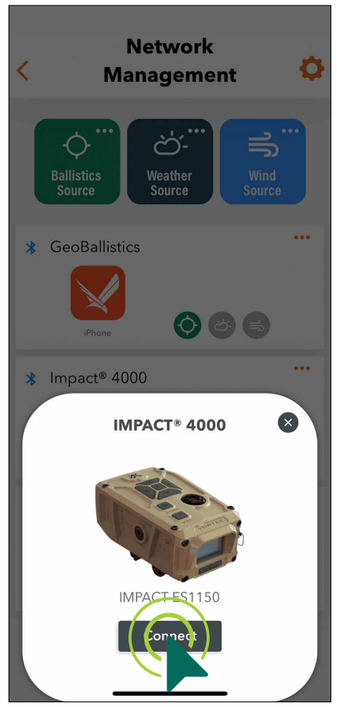


6. GeoBallistics® App and the Bluetooth® Remote are now paired. The Bluetooth® Remote is also paired to the Impact® 4000. This is denoted by a Bluetooth® symbol next to the Bluetooth® Remote and the Impact® 4000 next to the remote on the Bluetooth® Remote tile on the GeoBallistics® App.

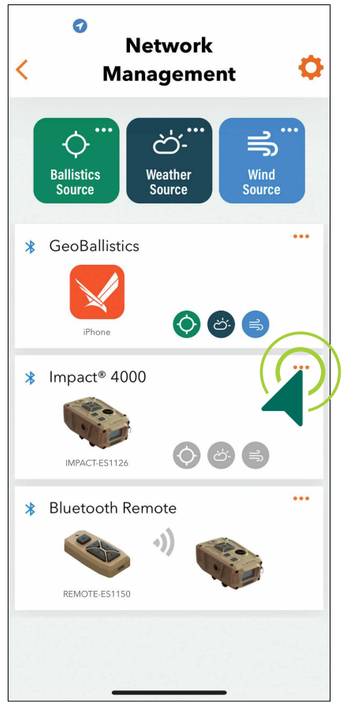


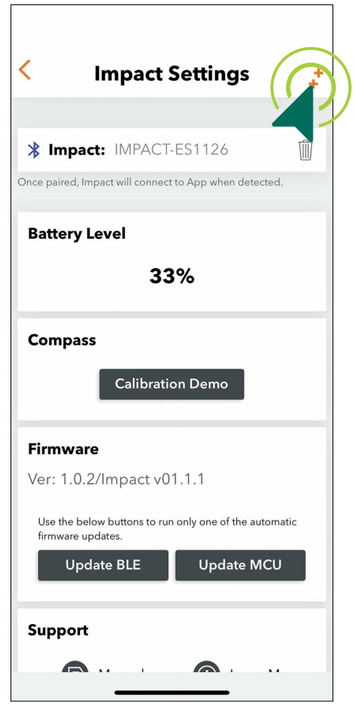
Adding a Second Impact® 4000 to Your Network

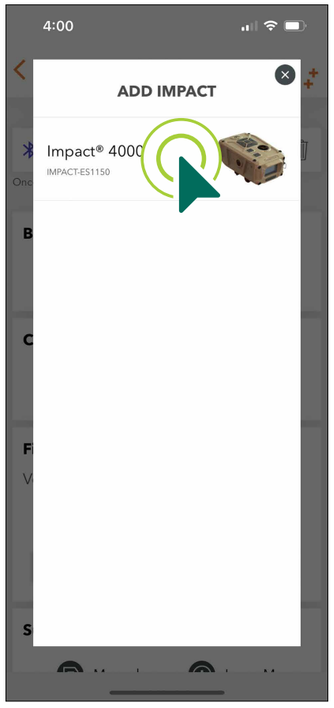
If you need to add a second Impact® 4000 device to your network, you can do so by following the same instructions on pages 34-35. If you are not prompted, you can add it manually by following the instructions below.



1. Select the ellipsis ••• next to the Impact® 4000 on the Network Management page to open Impact Settings.
2. Select the + icon on the top right corner of the page.
3. Ensure your Impact® 4000 device is on and select it from the list.





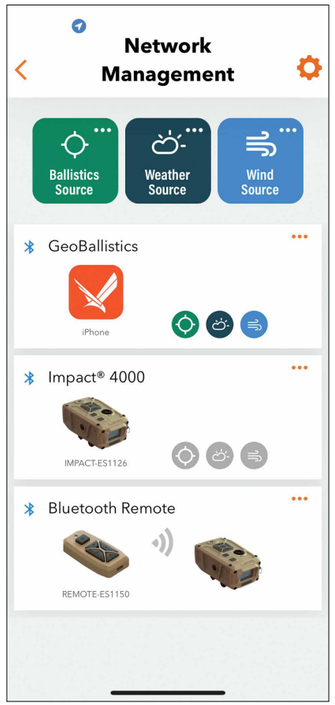


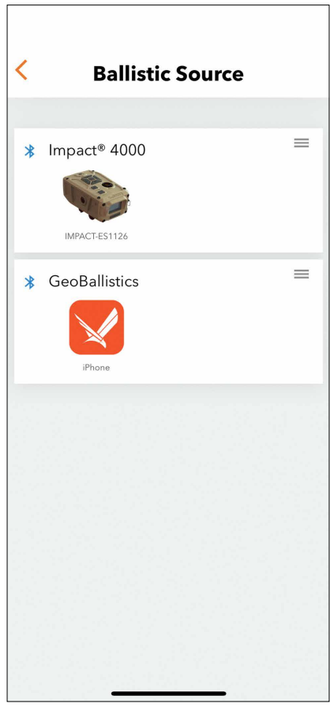
4. Your Impact® 4000 is now connected.

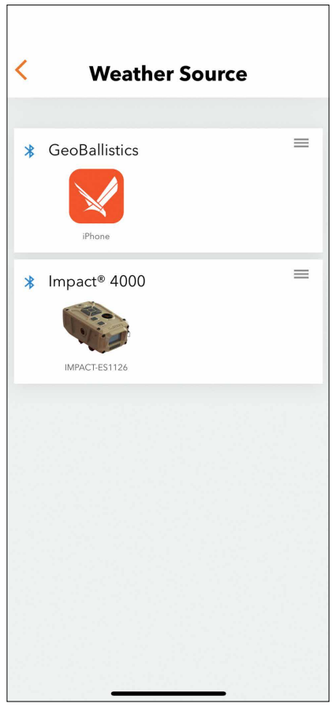
Choosing Data Sources

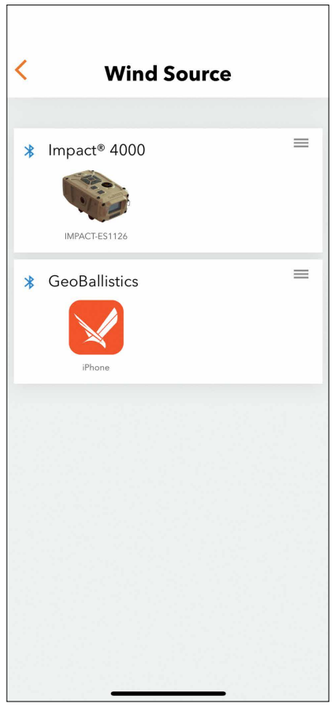
You can customize where ballistic, weather, and wind information are coming from on your network. To do so, from the Impact® Network Management screen, select the ballistics icon next to the device you would like to calculate your ballistic solution. Select the weather icon next to the device you would like to provide weather and the wind icon next to the device you would like to provide wind information.

You can establish a priority as to which devices will provide which information by selecting the Ballistic Source, Weather Source, and Wind Source icons at the top of the page. This priority would come into effect if one of your devices was not present or not connected to the network.





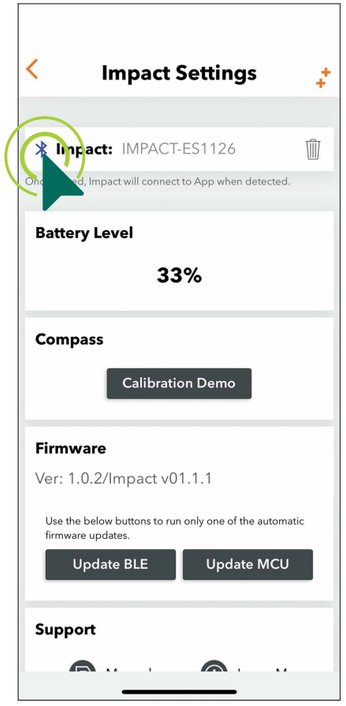




IMPACT® 4000 SETTINGS MENU

Bluetooth® Connection Status

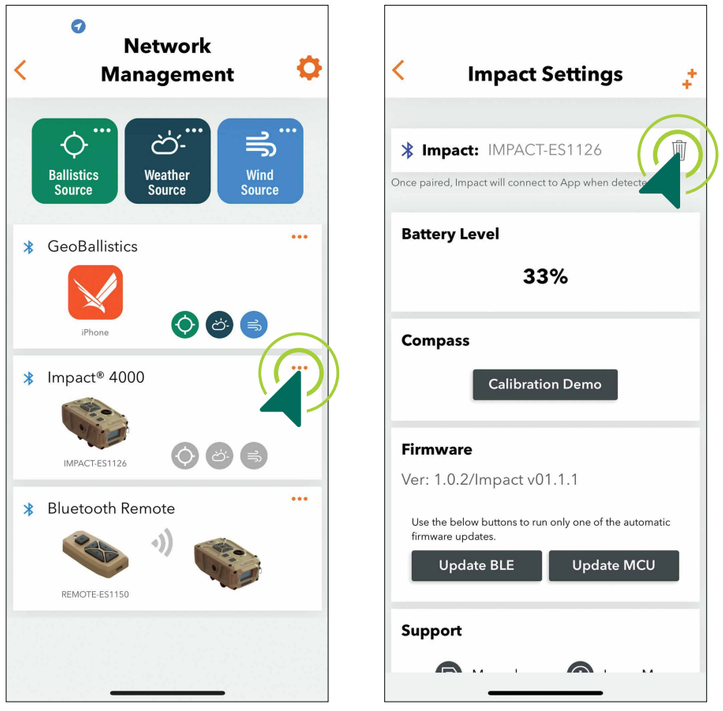
If your Impact® 4000 is connected it will be denoted by a blue Bluetooth® symbol. If your device is not connected the Bluetooth® symbol appear gray.



Disconnecting a Device from the Network

To disconnect a device from the network follow the instructions below:

1. From the Network Management screen, select the ellipsis ••• next to the device you'd like to disconnect.
2. From the device settings page, click the 🗑 icon next to the device name at the top.
3. Your device is now disconnected from your network.



Battery Level Indicator

The Impact® 4000's battery level will be displayed in this section of the Impact® Settings Menu.

Compass

The Compass section of the Impact® 4000 Settings menu will display the date and location of the last calibration of the device. You can also re-calibrate your device from this section.

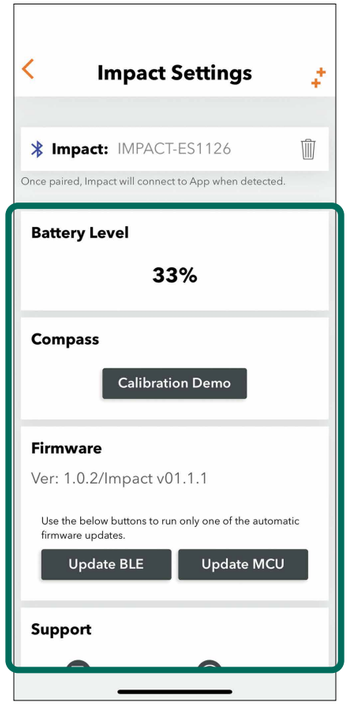
To calibrate the compass, press the "Calibration Demo" button. Follow the on-screen prompts or see page 9-11 for step by step calibration instructions.

Firmware

This section will show the latest firmware version of the Impact® 4000. If there is an update available, it will be listed in this section. Press "Update" to update to the latest version.

Support

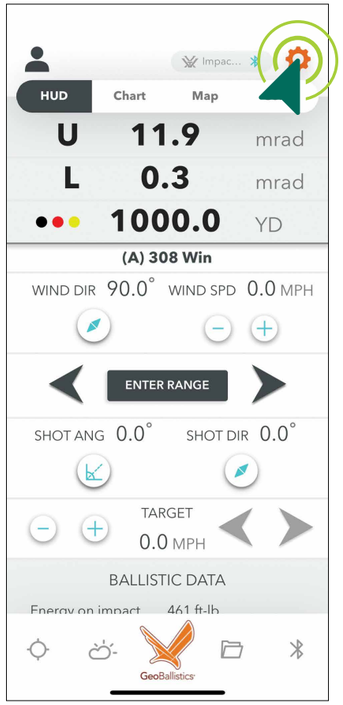
This section has a PDF copy of the latest manual and a link for more information.



APP SETTINGS MENU

To navigate to the App Settings Menu, select the settings icon in the upper right-hand corner of the screen. While in the App Settings Menu you will be able to change App Preferences, Ballistic Preferences, Mobile Sensors, Chart Increments, Distance Units, Rifle Profile Units, and Weather Units.

At the top of the App Settings Screen you'll see HUD, Chart, Map, and Comp. By selecting one of these options, that page will be the default screen when opening the app.



App Preferences

Auto-Locate

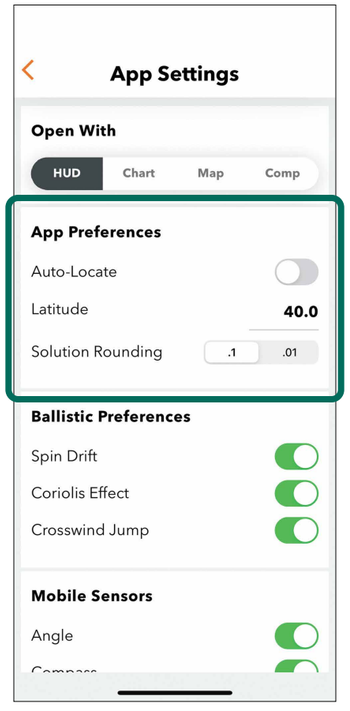
Auto-Locate will use your mobile device's latitude for ballistic calculations.

Latitude

Latitude allows for manual entry of latitude. This is disabled if Auto-Locate is on.

Solution Rounding

Solution Rounding allows you to set how many decimal places you would like the app solution to display.



Ballistic Preferences

For the most accurate ballistic solution, it is recommended to have Spin Drift, Coriolis Effect, and Crosswind Jump enabled.

Spin Drift

Spin Drift is a bullet's drift left or right due to the spin imparted by the bullet length in conjunction with barrel twist rate, and the interaction of gyroscopic and aerodynamic forces.

The Impact® 4000 can account for the effect of Spin Drift on the bullet when solving for your ballistic solution. To turn Spin Drift ON/OFF, tap the toggle icon.

Coriolis Effect

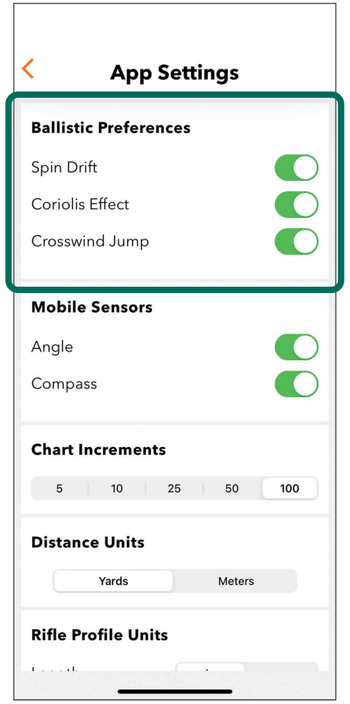
Coriolis Effect is the effect that Earth's rotation will have on long-range shot precision, moving the target slightly away from the bullet's intended point of impact during the time of flight.

The Impact® 4000 can account for the effect of Coriolis Effect on the bullet when solving for your ballistic solution. To turn Coriolis Effect ON/OFF, tap the toggle icon.

Crosswind Jump

Crosswind Jump refers to the small but measurable +/- vertical influence on a bullet's flightpath by a crosswind. The higher the wind velocity, the greater the influence.

The Impact® 4000 can account for the effect of Crosswind Jump on the bullet when solving for your ballistic solution. To turn Crosswind Jump ON/OFF, tap the toggle icon.



Mobile Sensors

Angle

Angle turns ON/OFF the mobile inclination angle sensor to determine the angle of the target. Tap the icon to toggle ON/OFF.

Compass

Compass turns ON/OFF the mobile compass sensor to determine the direction of the target. Tap the icon to toggle ON/OFF.

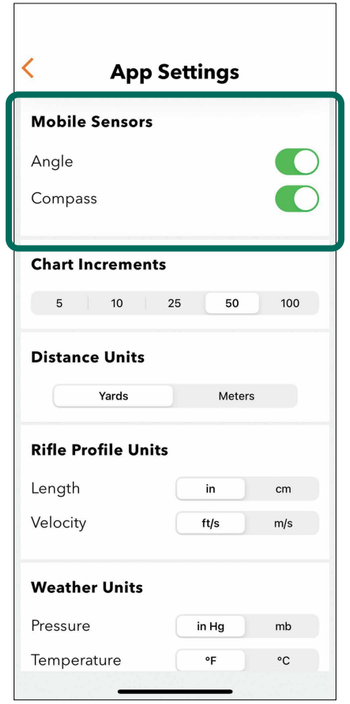
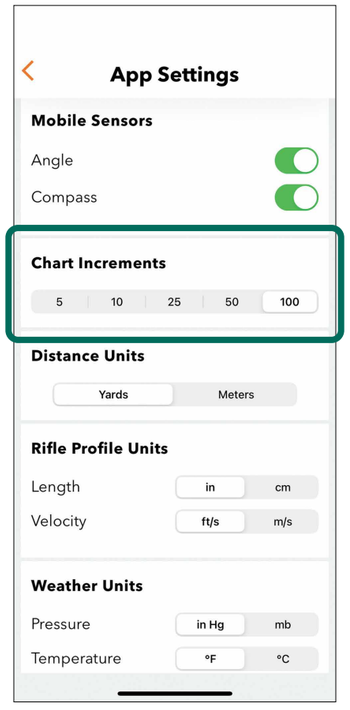


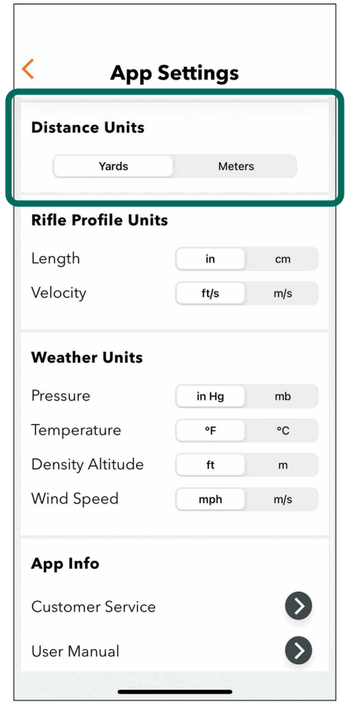
Chart Increments

Tap on the distance increments you wish the chart to be laid out in. (5, 10, 25, 50, or 100 yds./m)



Distance Units

The distance to the target can be displayed in Yards or Meters. Select the desired distance option in the menu.



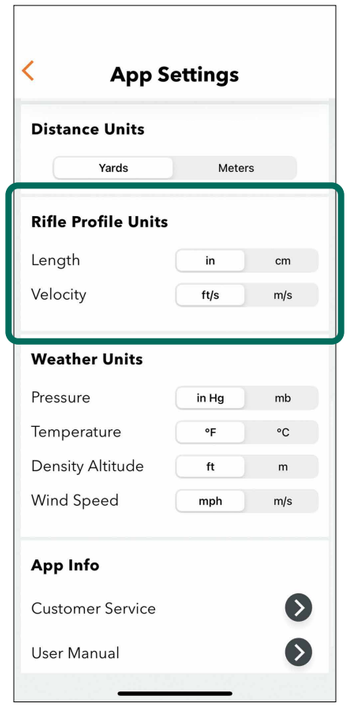
Rifle Profile Units

Length

The measured Sight Height, Elevation Offset, Windage Offset, and Vital Size can be displayed in either inches (in) or centimeters (cm). Select the desired option in the menu.

Velocity

The measured Muzzle Velocity and Velocity Threshold can be displayed in either feet per second (ft/s) or meters per second (m/s). Select the desired option in the menu.



Weather Units

Pressure

Pressure corresponds to the ambient atmospheric pressure surrounding you and your equipment. Atmospheric Pressure can be displayed in inches of mercury (in Hg) or millibars (mb). Select the desired option in the menu.

Temperature

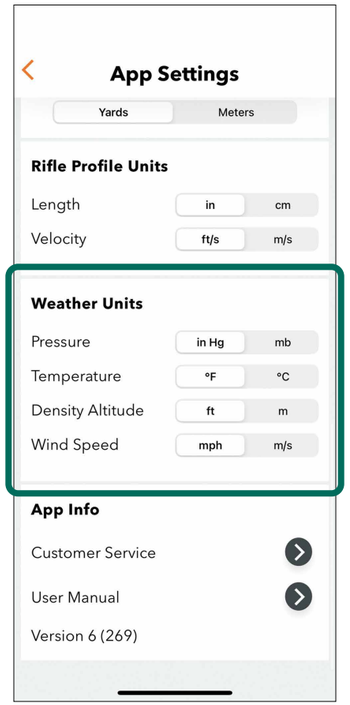
Temperature corresponds to the ambient temperature surrounding you and your equipment. Temperature can be displayed in Celsius (°C) or Fahrenheit (°F). Select the desired option in the menu.

Density Altitude

Density Altitude is a value derived from a combination of Temperature, Pressure, and Relative Humidity and can be used as a quick reference for atmospheric conditions. The Density Altitude can be displayed in feet (ft) or meters (m). Select the desired option in the menu. It will display in both the app and the rangefinder.

Wind Speed

Wind Speed corresponds to the wind speed at your measurement device. Wind Speed can be displayed in miles per hour (mph) or meters per second (m/s). Select the desired option in the menu.



Note: Weather units do not have to agree between the GeoBallistics® App and the Impact® 4000.

RIFLE & AMMUNITION PROFILES

You can have up to 10 profiles loaded into the Impact® 4000 at one time. These profiles can be setup in the Impact® Setup Menu or via the GeoBallistics® App.

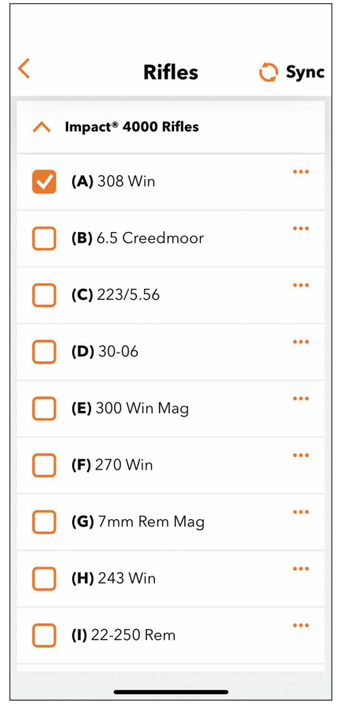
Default Profiles

The default profiles include .308 Winchester®, 6.5 Creedmoor®, .223/5.56, .30-06, .300 Winchester® Magnum, .270 Winchester®, 7mm Remington® Magnum, .243 Winchester®, .22-250 Remington®, and .22 Long Rifle.

Syncing Profiles to the Rangefinder

After connecting the Impact® 4000 to your app, the profiles will automatically sync between the Impact® 4000 and your app. The app and the laser rangefinder will automatically be synced anytime changes are made to the ballistic profiles and are saved. To view the profiles currently synced between your device and the Impact® 4000 navigate to the Rifles page by selecting the ⌖ icon on the lower left corner of the main screen. The currently synced profiles will be annotated with A-J before their names.

Note: If a change is made to a profile on either the Impact® 4000 or on your app when they are not connected, upon reconnection, you will be notified that there is a discrepancy and asked which device's information you'd like to use.

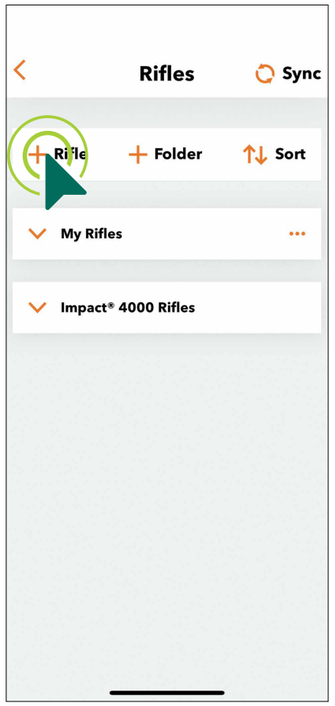


Creating Custom Ballistic Profiles

Custom ballistic profiles can also be created in the GeoBallistics® App. The bullet library will be periodically updated with the latest ballistic information from GeoBallistics®.

To create a custom ballistic profile:

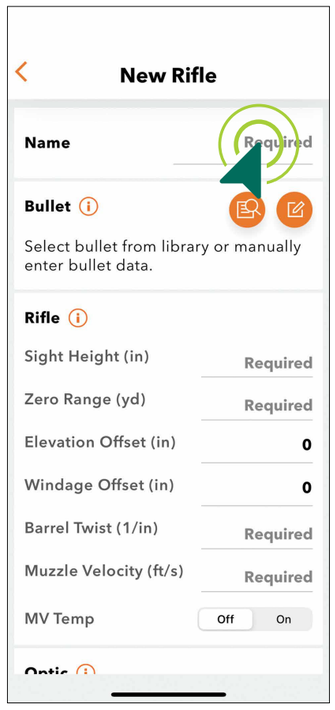
1. Select ⌖ from the home screen, then select + **Rifle** on the Rifles screen.



2. Select Folder that you wish to add the profile to. “Impact® 4000 Rifles” is the only folder that profiles can be synced to the Impact® 4000.

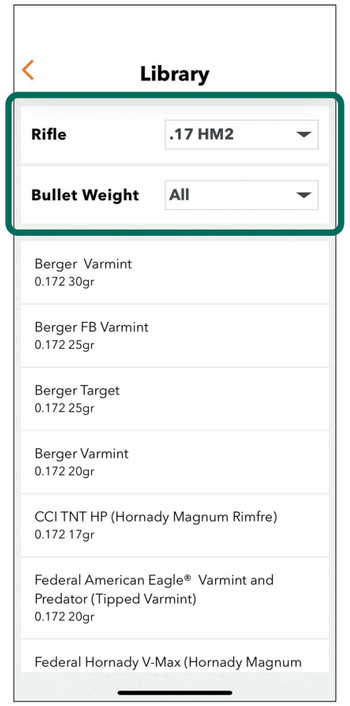
   Note: You can change folders after the profile is created.

3. Name the new profile.



4. Enter the bullet data by selecting the icon. Select your ammunition’s caliber, and bullet weight from the list. Then, select the exact bullet you are using. This information can be found on your ammunition’s box.

   Note: Bullet data may also be added by simply selecting the edit icon and inputting the following:



Caliber (in):
The bullet’s diameter in inches.

Weight (gr):
The bullet’s weight in grains.

Length (in):
The bullet’s length in inches.

Drag Fuction:
See Drag Model section below.

Metro:
See Meteorological Conditions below.

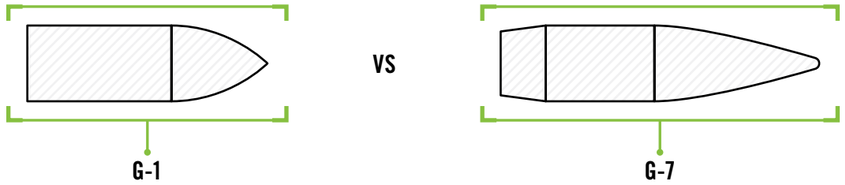
Ballistic Coefficient:
The bullet’s ballistic coefficient as it correlates to the drag function.

These values can be found on the cartridge’s box or on the manufacturer’s website.

Drag Model – G1 vs. G7 vs. Drag Coefficient

This information may be printed on the box if you are using manufactured bullets. If you are using custom loads, use the Drag Model listed on the packaging for your bullet. If the Drag Model is not listed on the packaging, this information can usually be found on the bullet/ammo manufacturer's website.

In general, G1 is better for flat-based bullets typically used with pistols and muzzleloaders. G7 is more common and better for longer, boat-tailed bullets which are common for centerfire cartridges.



A custom drag model is a more refined way of modeling drag for bullets because it uses the actual measured drag of a specific bullet in a ballistic solver. The app provides access to the full bullet library including custom curve data on nearly all commercially available bullets. We recommend always selecting a custom drag model when available as it will provide the most accurate solution.

Note: Drag Model options: Multi G1, Multi G7 or CD, can be imported from the GeoBallistics® App. When using these the ballistic coefficient will read "MULTI" or "1" and the Drag Model will read "MULTI G1", "MULTI G7", or "CD" based on your selection.

Meteorological Conditions (Metro) – Army vs. ICAO

This will be a standard set of atmospheric conditions used to calculate the aerodynamic drag on the projectile. This choice only applies to manual bullet entries. Using the bullet library will automatically populate Army or ICAO. For manual bullet entries, if you know the atmospheric standard that was used to calculate your bullet's BC, select it here. If you do not know which standard is used by a manufacturer, choosing a bullet from that manufacturer in the library will let you know which standard that manufacturer uses. The difference between the two atmospheric standards is very slight but using the correct standard for your bullet BC will yield slightly improved ballistic numbers at long ranges.

Note: The ballistic solution provided by the Impact® 4000 is only as reliable as the following data provided by the user. Please contact Vortex Optics at 1-800-4VORTEX (1-800-486-7839) Ext. 5 with any questions.

Rifle Information

Sight Height

Height from the center of the rifle bore to the center of the optic. The measurement units can be set to standard (inches) or metric (centimeters) in the Settings Menu.

Zero Range

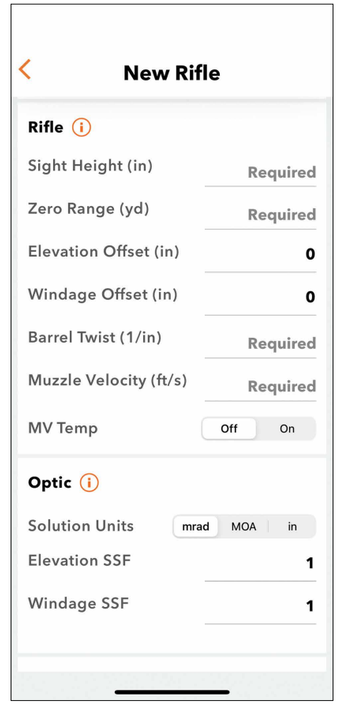
The distance at which you have zeroed your rifle. The measurement units can be set to standard (yards) or metric (meters) in the Settings Menu.

Elevation Offset

Vertical offset from the point of aim at your zero distance. For example, you entered 100 yards for your Zero Range and at 100 yards your point of impact is 1 inch high, enter "1" here, if your point of impact is 1 inch low, enter "-1" here. The measurement units can be set to standard (inches) or metric (centimeters) in the Settings Menu.

Windage Offset

Horizontal offset from the point of aim at your zero distance. For example, you entered 100 yards for your Zero Range and at 100 yards your point of impact is 1 inch right, enter "1" here, if your point of impact is 1 inch left, enter "-1" here. The measurement units can be set to standard (inches) or metric (centimeters) in the Settings Menu.



Barrel Twist Rate

Barrel Twist Rate is the distance covered for each revolution of the bullet within the barrel. For example, if your barrel is denoted as "1:8", this means the bullet will complete one full rotation every 8 inches and you should enter "8" into this space. This information may be marked on the rifle barrel, or on the manufacturer's website. Update the Twist Rate to match your rifle.

Note: Use a negative or minus sign in front of the entered value to denote a lefthand twist. If the twist direction is not known, do not use a negative or minus sign which will denote righthand twist.

Muzzle Velocity

Muzzle Velocity is the projectile's speed as it leaves the muzzle. You can find this information on the packaging from most ammunition manufacturers, or their websites. We highly recommend that you use a chronograph to verify this information. The measurement units can be set to standard (ft/s) or metric (m/s) in the Settings Menu.

MV Temp (Optional)

Muzzle Velocity Temperature (MV Temp) allows you to add recorded muzzle velocity as it correlates to the ambient temperature at the time of the shot. This can be important to fine tuning your ballistic solution. MV Temp is defaulted to off, but it may be turned on by toggling the switch to on. After you have toggled the MV Temp on, Muzzle Velocity will be "Disabled" in the field above. You can enter a custom muzzle velocity temperature table. The use of a chronograph is required for this information. Enter the muzzle velocity measured, and the temperature at which it was measured. Vortex® recommends entering at least two temperatures with corresponding muzzle velocities. For best results, each temperature entry should increase/decrease by at least 10 degrees. If only using two measurements, they should be close to the minimum and maximum expected temperatures expected. The measurement units can be set to standard (°F) or metric (°C) in the Settings Menu.

Note: You can import the latest temperature reading received by the app by selecting the "+ current" button.

Optic Information

Solution Units

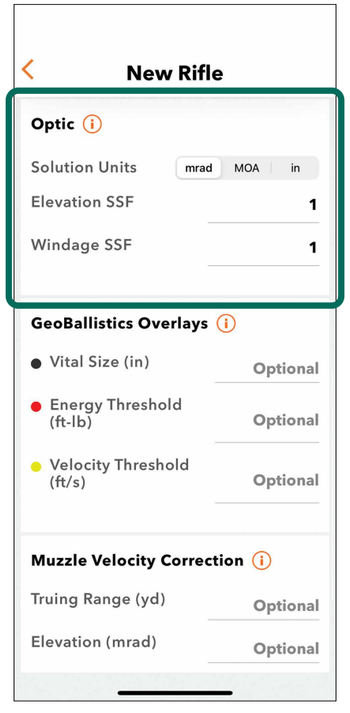
Choose the Solution Unit you would like to have your drop chart displayed with. MRAD, MOA, or inches. This information will be based off the angular unit of measurement your riflescope's turrets and reticle are laid out in.

Elevation SSF (Sight Scale Factor)

Elevation Sight Scale Factor is used to account for any inconsistencies in turret tracking, specifically the elevation turret. Default is set at "1.00," indicating there is no tracking inconsistency. SSF is calculated by taking the elevation dialed divided by the actual point of impact change. For example, if 20 MOA is dialed, but the point of impact changes by 19 MOA, the correction factor is 20/19 = 1.052.

Windage SSF (Sight Scale Factor)

Windage Sight Scale Factor is used to account for any inconsistencies in turret tracking, specifically the windage turret. Default is set at "1.00," indicating there is no tracking inconsistency. SSF is calculated by taking the windage dialed divided by the actual point of impact change. For example, if 20 MOA is dialed, but the point of impact changes by 19 MOA, the correction factor is 20/19 = 1.052.



GeoBallistics® Overlays (Optional)

Vital Size

For Vital Size, estimate the diameter of the vital area of your target and enter here. The ballistic solver will take this value into account when calculating and displaying your ballistic solution in the GeoBallistics® App. If the Point of Aim (POA) is in the middle of the vital area, the GeoBallistics® App will show the range at which your bullet drop will be outside of the vital area. This is denoted by a black overlay on the ballistics chart.

Energy Threshold

The Energy Threshold, the desired bullet energy at impact to perform an ethical shot, may be entered and then the ballistic solver will take this into account when calculating and displaying the solution on the GeoBallistics® App. This is denoted by a red overlay on the ballistics chart.

Velocity Threshold

The Velocity Threshold, the desired bullet velocity at impact to perform an ethical shot, may be entered and then the ballistic solver will take this into account when calculating and displaying the solution on the GeoBallistics® App. This is denoted by a yellow overlay on the ballistics chart.

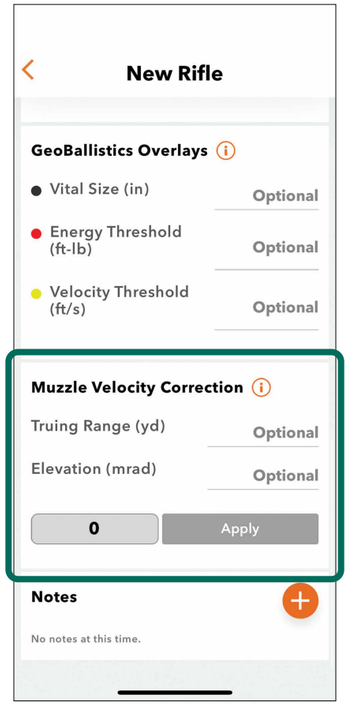
Note: For more information on these overlays please refer to the GeoBallistics® Pro Manual located at the bottom of the App Settings page in the GeoBallistics® App.

Muzzle Velocity Correction (Optional)

The Muzzle Velocity Correction can be used to fine tune the ballistic solver by calculating a hypothetical muzzle velocity based on your rifle, riflescope, and ammunition. You can input a Truing Range and Elevation, which is the shot distance and elevation correction where the Point of Aim (POA) was observed to equal the Point of Impact (POI). By clicking "Apply", the calculated muzzle velocity will then replace the muzzle velocity in the rifle profile. This process is essentially replacing the predicted muzzle velocity with an observed drop that was built from your personal equipment. The measurement units can be set to standard (inches) or metric (centimeters) in the Settings Menu.

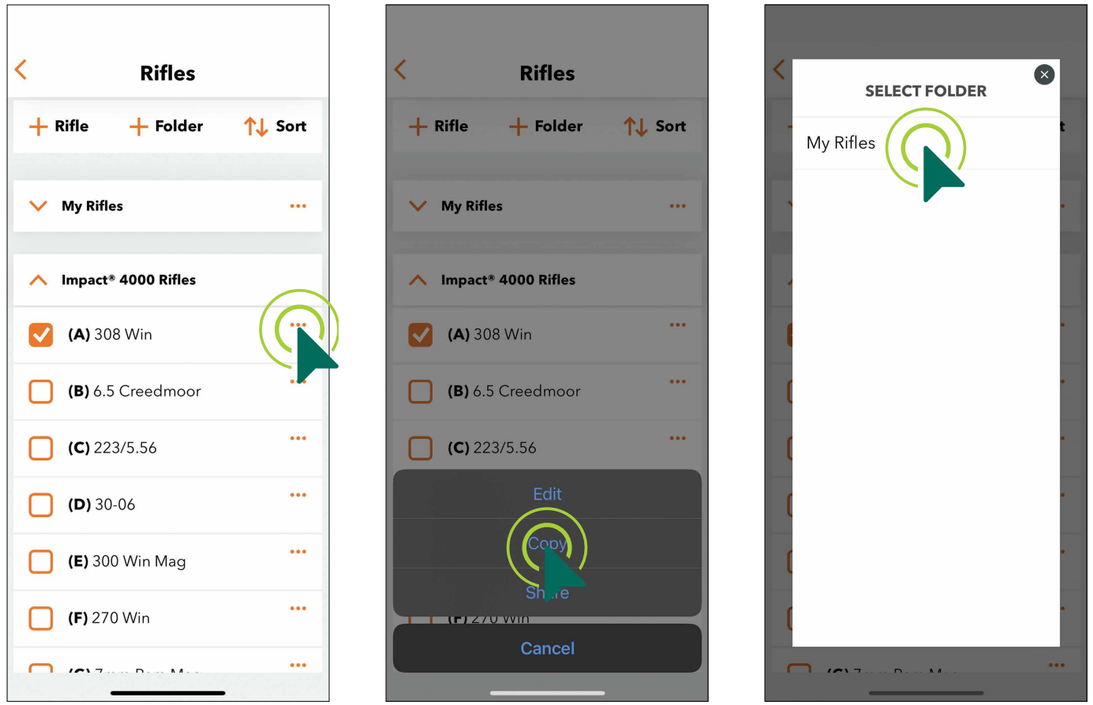
Truing Range will vary depending on your situation; generally, the further the truing range the more accurate the results will be. It is important to ensure that atmospheric conditions are accurately represented before completing his calculation to receive accurate results.

Note: For more information on Muzzle Velocity Correction please refer to the GeoBallistics® Pro Manual located at the bottom of the App Settings page in the GeoBallistics® App.



Copying a Profile

To copy a profile:



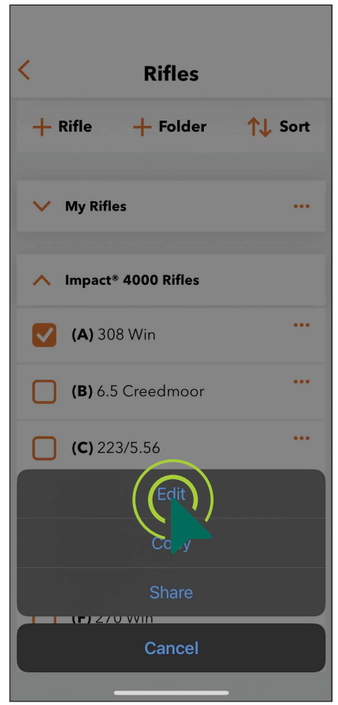
1. While in the Rifles section select the profile that you wish to duplicate by tapping the ellipsis ••• on the right of the profile.
2. Select “Copy.”
3. Select the folder you wish to add the profile to.
4. Once a profile has been copied, the profile will automatically rename with the addition “(copy)” at the end of the profile name. If desired, rename the profile using the steps in the following section.

Editing a Profile

Profiles can be edited to update specific data to represent the ballistic information most accurately for your firearm and ammunition.

To edit a ballistic profile:

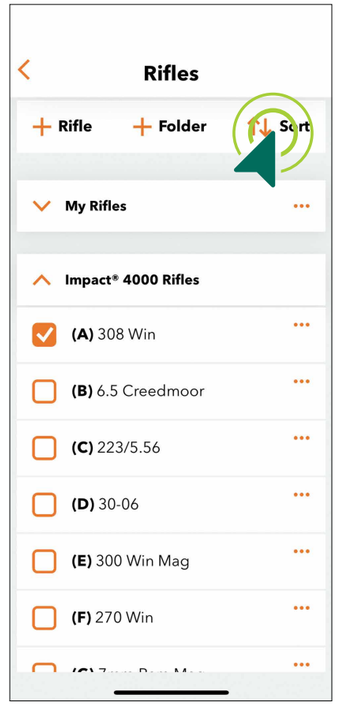
1. Press the ellipsis ••• and select “Edit”.
2. Update the data points for your firearm and ammunition.
3. The edits will save automatically when you exit the profile.



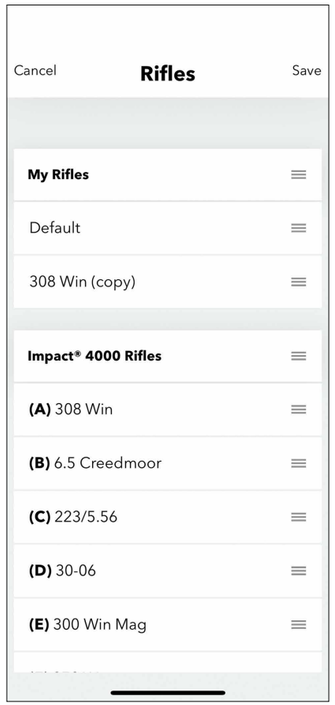
Setting Up & Switching Profiles in the GeoBallistics® App

You can change the identifier (A-J) assigned to a profile in the GeoBallistics® App. Only profiles in the Impact® 4000 Rifles folder can be assigned an identifier.

1. At the top of the Rifles screen select the ↑↓ **Sort** icon.



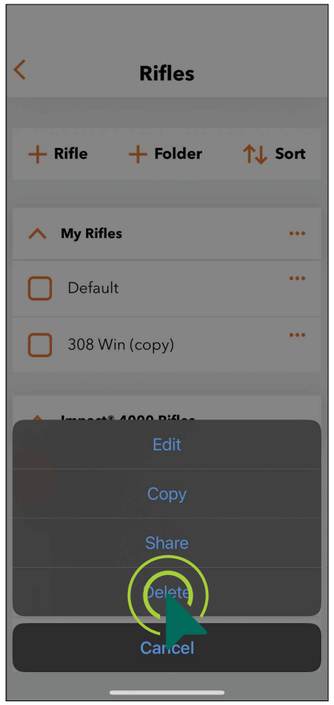
2. Press and drag the profile to the desired location. The top profile in Impact® 4000 Rifles will be identified as (A), the second profile will be (B), and the third profile will be (C) etc.
3. Once the profiles are identified correctly and are in the correct folder, tap “Save” in the top right-hand corner.
4. The profile will automatically sync to the Impact® 4000 the next time it is connected to the GeoBallistics® App.



Deleting a Profile in the GeoBallistics® App

While in the Rifles section, select the ellipsis ••• next to the profile that you wish to delete. Select “Delete”.

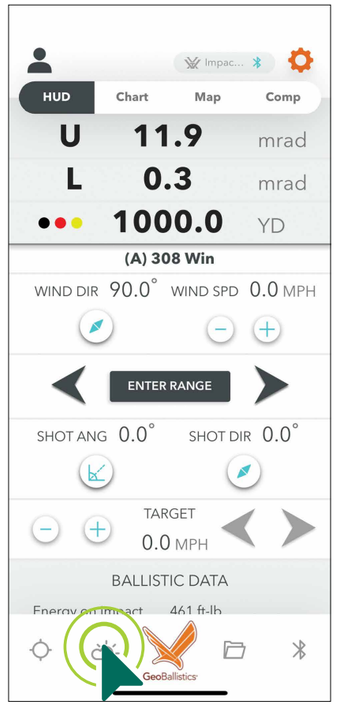
Note: It is required to always have 10 profiles saved in the Impact® 4000 Rifles Folder.

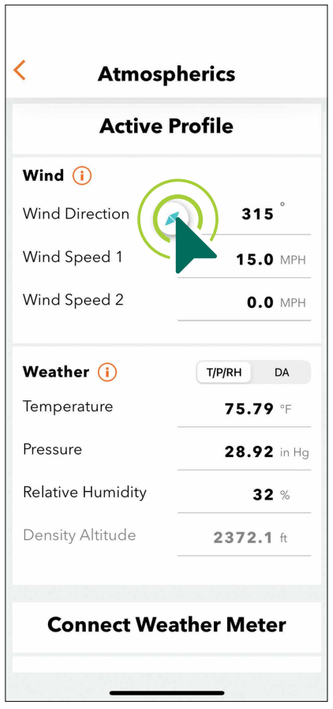


ENTERING WEATHER IN GEOBALLISTICS® APP

Wind

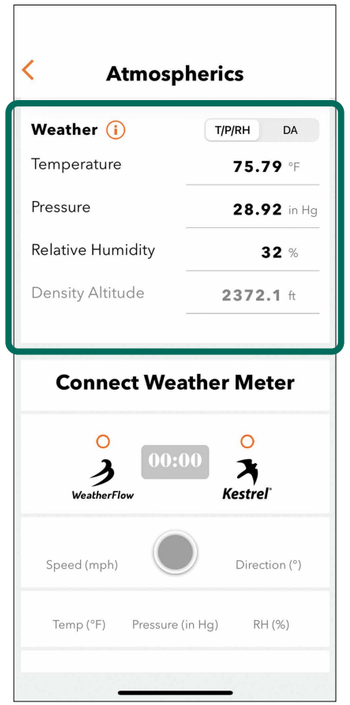
1. Select the ⛅ from the main page on the GeoBallistics® App to view the Atmospherics page.
2. Under Active Profile, press the ⌖ button while facing into the wind to capture wind bearing.
3. Input the Wind Speed.





Weather

Ambient temperature, absolute pressure, and relative humidity can be manually entered, or obtained by the Impact® 4000, a Kestrel®, a WeatherFlow®, or a nearby airport. Density altitude can be manually entered or obtained from the Kestrel® when connected to the GeoBallistics® App.

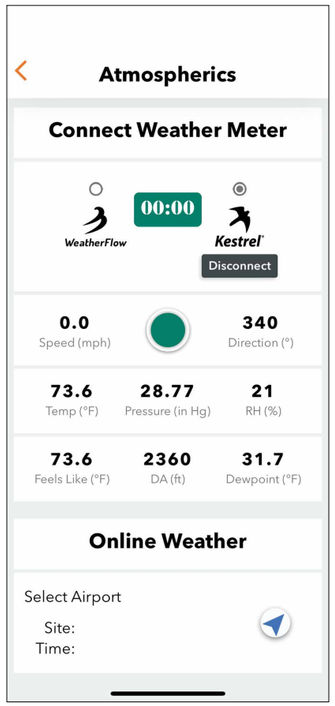


Connect Weather Meter

This section will display live environmental data measured from your Kestrel® or WeatherFlow® once it is connected to the app. Refer to "Third Party Weather Devices" section. Hold the green button ● to collect and lock in the weather meter environmental data into your Active Profile displayed above.

Online Weather

Tap the arrow to select a nearby airport as your weather data source. The drop down menu will display the nearest airports. Once selected, you can tap "Use" next to the Wind Speed/Direction Data and the Temperature, Pressure, Humidity, and Density Altitude Data that was obtained from the selected airport. This data will then be displayed under Active Profile.



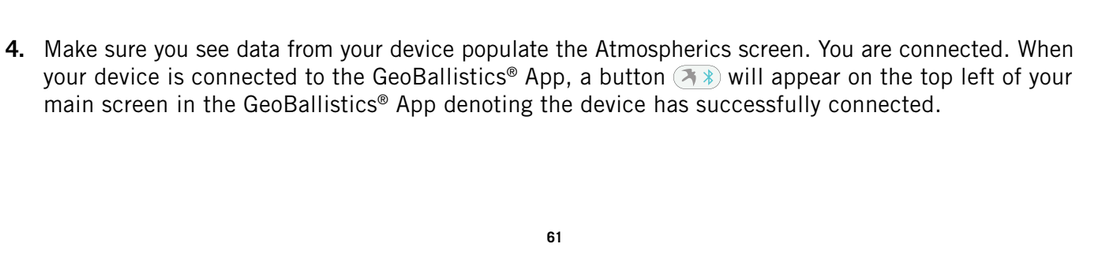
Third Party Weather Devices

The GeoBallistics® App is compatible with Kestrel® and WeatherFlow® devices for gathering environmental conditions and wind. When the Kestrel® or WeatherFlow® is connected to the GeoBallistics® App, the ballistic solution is provided by the app's on-board solver using environmental data from the Kestrel® or WeatherFlow® device.

To connect a Kestrel® or WeatherFlow® to the GeoBallistics® App:

Note: This method will allow you to use environmental data from your third-party weather device including wind speed and direction, ambient temperature and pressure, relative humidity, density altitude, and dewpoint.

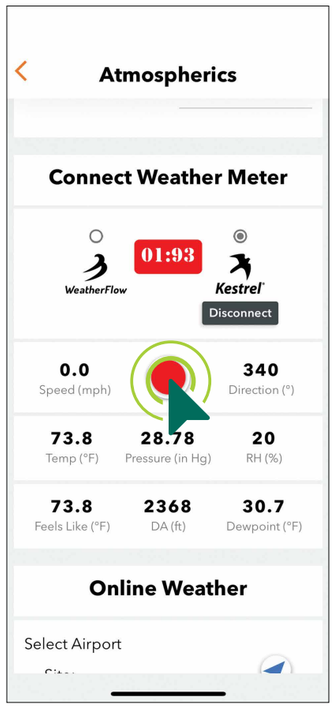
1. Make sure your third-party device has Bluetooth® enabled and is in PC/Mobile mode (Kestrel® only).
2. From the main screen of the GeoBallistics® App, select ⛅ to access the Atmospherics screen. Scroll down until you see Connect Weather Meter.
3. Select the logo of the brand of the device you have and tap the device name to connect.



4. Make sure you see data from your device populate the Atmospherics screen. You are connected. When your device is connected to the GeoBallistics® App, a button ⛅ will appear on the top left of your main screen in the GeoBallistics® App denoting the device has successfully connected.

Using a Weather Meter with the Impact® 4000 and the GeoBallistics® App:

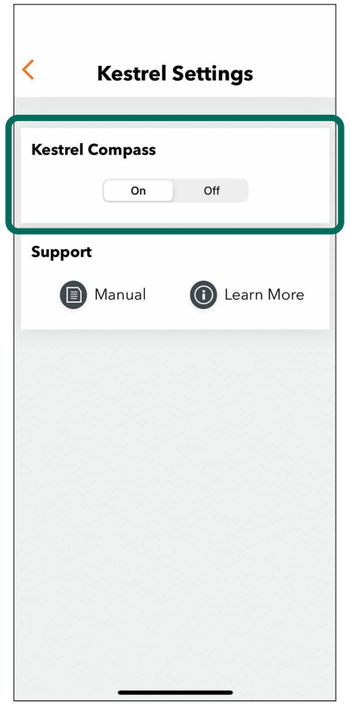
When your weather device is connected to the GeoBallistics® App, it can provide all environmental data to the GeoBallistics® App in order to calculate your ballistic solution. Once your weather meter is properly connected to the GeoBallistics® App, press the green button under Connect Weather Meter on the Atmospherics page to lock in the data measured from the device to your Active Profile. You may also press and hold the green button ● to capture an average of data while you're holding the button, which will turn red and display a timer while holding.



From the main screen of the GeoBallistics® App, you will see a button appear on the top left ( ) if your weather meter is properly connected to the GeoBallistics® App. Select this button to toggle the weather meter compass ON or OFF. Enabling the weather meter's compass will populate the wind direction in the GeoBallistics® App with the data received from the device.

Disconnecting

To disconnect the weather meter from the GeoBallistics® App, select Disconnect from the Atmospherics page under Connect Weather Meter.



RANGEFINDING TIPS

Laser rangefinders work by emitting a brief pulse of light aimed at a target object. Distance is determined by the amount of time taken for the light to emit and return to the laser's internal receiver. A laser's ability to read range can be affected by many things, mostly relating to the target object.

- Light colors will usually reflect better than dark ones.
- Snow, rain, air quality, and fog will have adverse effects on ranging ability.
- Dull or textured surfaces will not reflect as well as a hard, shiny surface.
- Ranging under cloud cover can improve laser performance compared to bright, sunny conditions.
- Solid objects, such as rocks, will reflect better than bushes.
- Flat surfaces perpendicular to the laser will reflect better than curved surfaces or surfaces angled in relation to the laser.
- Ranging over water can sometimes cause false reflections and readings.
- At longer distances, larger objects will be easier to range than smaller objects.
- Using a stable position or platform with the Impact® 4000 will greatly increase your ability to range small targets at longer distances.
- If you are having difficulty ranging an animal or object, try ranging a different nearby object or switch to ELR Mode.

MAINTENANCE

Cleaning

Your Impact® 4000 requires very little routine maintenance other than periodically cleaning the exterior lenses. The exterior may be cleaned by wiping with a soft cloth. When cleaning the lenses, be sure to use products that are specifically designed for use on coated optical lenses.

- Be sure to blow away any dust or grit on the lenses prior to wiping the surfaces.
- Using your breath, or a small amount of water or pure alcohol, can help remove stubborn dried water spots.

Lubrication

All components of the Impact® 4000 are permanently lubricated, so no additional lubricant should be applied.

Note: Other than to remove the Battery Cap, do not attempt to disassemble any components of the rangefinder. Disassembling of rangefinder may void warranty.

Storage

If possible, avoid storing your rangefinder in direct sunlight or any very hot location for long periods of time. We recommend using the included sure fit cover for added protection during storage and transportation.

TROUBLESHOOTING GUIDE

The Impact® 4000 will not show up in the GeoBallistics® App in my device.

- Bluetooth® modules of a certain age may not be able to communicate with modern devices. Devices such as iPhone 6 and older, or Android 4.0 and older, may not work with the Impact® 4000.

I have paired my Impact® 4000 with my device, but they are not communicating.

- If you have successfully paired before, and the device and Impact® 4000 will not communicate, toggle Bluetooth® ON and OFF on your device.

My compass will not calibrate.

- If the compass will not calibrate, ensure you are calibrating the compass outside and away from buildings, cell towers, or other structures.
- If the Impact® 4000 calibration is off, then repeat the calibration. The Impact® 4000 may need to be recalibrated when changing geographic location, typically 30 miles or more.

INDEX

Default Profiles

BULLET	.308 WIN	6.5 CREEDMOOR®	223/5.56	30-06	300 WIN MAG
Bullet Weight	175gr	140gr	55gr	165gr	180gr
Bullet Diameter	0.308 in	0.264 in	0.224 in	0.308 in	0.308 in
Bullet Length	1.24 in	1.38 in	0.75 in	1.17 in	1.24 in
Barrel Twist	12 (1:12)	8 (1:8)	12 (1:12)	10 (1:10)	10 (1:10)
Drag Function	G7	G7	G7	G7	G7
METRO	ICAO	ICAO	ICAO	ICAO	ICAO
Ballistic Coefficient	0.243	0.326	0.131	0.204	0.246
RIFLE					
Latitude	43	43	43	43	43
Muzzle Velocity	2600 ft/s	2710 ft/s	3240 ft/s	2800 ft/s	2960 ft/s
Sight Height	1.75 in	1.75 in	2.70 in	1.75 in	1.75 in
Zero Range	100 yds.	100 yds.	100 yds.	100 yds.	100 yds.
Elevation Offset	0	0	0	0	0
Windage Offset	0	0	0	0	0
Elevation SSF	1	1	1	1	1
Windage SSF	1	1	1	1	1
Elevation Units	MIL	MIL	MOA	Inches	MOA
Windage Units	MIL	MIL	MOA	Inches	MOA

BULLET	270 WIN	7MM REM MAG	243 WIN	22-250 REM	22 LR
Bullet Weight	130gr	160gr	100gr	55gr	40gr
Bullet Diameter	0.277 in	0.284 in	0.243 in	0.224 in	0.224 in
Bullet Length	1.24 in	1.40 in	1.03 in	0.82 in	0.48 in
Barrel Twist	10 (1:10)	10 (1:10)	10 (1:10)	14 (1:14)	16 (1:16)
Drag Function	G7	G7	G7	G7	G1
METRO	ICAO	ICAO	ICAO	ICAO	ICAO
Ballistic Coefficient	0.223	0.236	0.183	0.12	0.121
RIFLE					
Latitude	43	43	43	43	43
Muzzle Velocity	3100 ft/s	2950 ft/s	2960 ft/s	3680 ft/s	1255 ft/s
Sight Height	1.75 in	1.75 in	1.75 in	1.75 in	1.75 in
Zero Range	100 yds.	100 yds.	100 yds.	100 yds.	50 yds.
Elevation Offset	0	0	0	0	0
Windage Offset	0	0	0	0	0
Elevation SSF	1	1	1	1	1
Windage SSF	1	1	1	1	1
Elevation Units	Inches	MOA	MOA	Inches	Inches
Windage Units	Inches	MOA	MOA	Inches	Inches

COMPLIANCE

United States

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.

Contains FCC ID: T7V1760A

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.

Canada

CAN ICES-3B/NMB-3B

Contains IC: 216Q-1760A

Australia and New Zealand

Japan

Class B ITE

この装置は、クラスB 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。 VCCI－B

Translation:

This is a Class B product based on the standard of the VCCI Council. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

FCC REQUIREMENTS

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

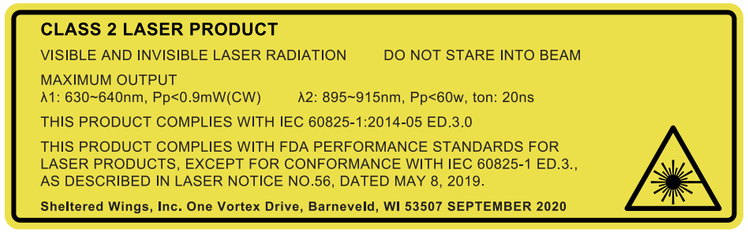
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate 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.

SAFETY AND PRECAUTIONS

Do not stare into beam or view directly without laser eye protection. Staring continuously into beam for prolonged periods of time could cause harm to your eyes. If used properly, this device is safe for your eyes and laser safety eye protection is not needed.

- Use the correct battery (CR123) and proper battery orientation.
- Do not look at sun.
- Do not activate Menu or Measure buttons while aiming at eye or looking into objective lens.
- Do not disassemble.
- Do not allow children to play with unit.



Caution—Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.

NOTICE

Virtual Patent Marking Notice by Vortex Optics

This product may be protected by patents in the U.S. and elsewhere for Vortex Optics. **http://vtx.legal** website is provided to satisfy the virtual patent marking provisions of various jurisdictions including the virtual patent marking provisions of the America Invents Act and provide notice under 35 U.S.C. §287(a). Please visit **http://vtx.legal** to view list of products that may be covered by one or more U.S./Foreign patents or published patent applications.

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OUR UNCONDITIONAL PROMISE TO YOU.

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- **Unconditional.**
- **Lifetime Warranty.**

You do not have to register, save the box, or a receipt
for the Warranty to be honored.

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Note: *The VIP Warranty™ does not cover loss, theft, deliberate damage, or cosmetic damage not affecting product performance.*

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