ESPY 12/20

BALLISTIC LASER RANGEFINDER

PRODUCT MANUAL

SPECIFICATIONS

Model	ESPY 12B	ESPY 20B
Magnification	6X	
Object Lens Diameter	26mm	
Range	0-1200YD	0-2000YD
Ballistic Compensation	875YD	1500YD
BOSS App Version	AB UltraLite	AB Sportsman
Accuracy	±1 YD	
Display	HD-LCD Display	
Backlit	Red/black automatically switching	
Auto Shutoff	Yes	
Angle Compensation	Yes	
Bluetooth	Yes	
Passed AB LAB tests	Yes	
Laser Wavelength	905nm, Class 1	
Battery Type	CR2-3.0V	
Mounting	Standard tripod interface	
Resistance Protection	IP54, against dust & splash water	
Weight	185g (batteries not included)	
Dimensions	125X80X35mm	

CONTENTS

- ESPY 12 or ESPY 20 Ballistic Laser Rangefinder
- User Manual
- Cleaning Cloth
- Lanyard
- Tool for Battery Cap Loosing
- Soft Case with Carabiner Clip
- Desiccant

INTRODUCTION

The ESPY Ballistic Laser Rangefinder is an ultra-compact, high-end laser rangefinder with the latest digital technology that provides accurate range readings up to 2200 yards or 1999 meters. ESPY features a new rangefinder engine for faster, more consistent response and readings, a vivid LCD display with higher light transmission and waterproof (IP54) construction, and a high-grade coating on the optics. Applied Ballistics data in the rangefinder can communicate via Bluetooth with the free BOSS app on your smartphone to relay updated display information and Settings as well as configure ballistics data for near-perfect holdovers and wind adjustment.

BASIC OPERATION

Battery

Installation

To install, loose the battery cap with the provided tool in the package, place the positive end (+) facing inwards, then tighten the battery cap.

Note: It is recommended that CR2 3-volt lithium batteries should be replaced at least every 12 months.

Battery Level Indicator Icon

- Full charge
- 3/4 battery level remaining
- 1/2 battery level remaining
- 1/4 battery level remaining
- Battery icon blinks： battery needs to be replaced and unit will not be operable.

Installing the Lanyard

Install the lanyard loop through the lanyard attachment point. Pass the lanyard back through the loop for secure attachment.

Powering Up

Once the battery is installed, press the RANGE button once to activate the display. The reticle will be shown on the screen.

Ranging

- To activate the display, position the reticle on the target and press and hold the RANGE button until the distance is displayed above the reticle.
- To range a new target, simply re-aim and press the RANGE button again.

Note: The display will remain on and display the last distance measurement for 30 seconds until the display automatically shuts off to extend battery life.

Diopter Focus Adjustment

The diopter focus adjustment is integral to the eyecup. The focus adjustment is used to bring the display into sharp focus along with the target image. Turn clockwise or counterclockwise until the image is sharp.

Choosing between Meter and Yard

Press MENU button to toggle between yard and meter.

Bluetooth

Hold down the MENU key for 2 seconds to enable Bluetooth.

Note: The display will automatically shut off after 15 minutes with the Bluetooth on.

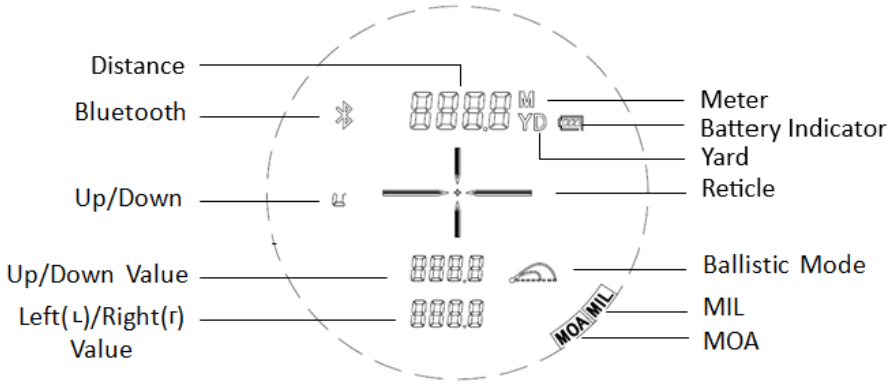
Red/Black HD-LCD Display

The display automatically switches between red and black depending on the ambient light condition.

Tripod Use for Ranging

Using a tripod to steady your ESPY will increase your ability to range small targets at longer distances. If the ESPY is used on a tripod, the reticle may appear tilted depending on tripod level.

Display Indicators



DOWNLOADING AND CONFIGURING THE FREE BOSS APP

In this section you will download the free "AB Synapse - BOSS App", pair the BOSS App with your ESPY and create custom bullet profiles.

Download "the AB Synapse - BOSS App" from the App Store / Google Play Store

1. Go to the App Store or the Google Play store.
2. Search for the word "**AB Synapse – BOSS**". (Pic on the right)
3. Download the "AB Synapse – BOSS App".

Turn Bluetooth on

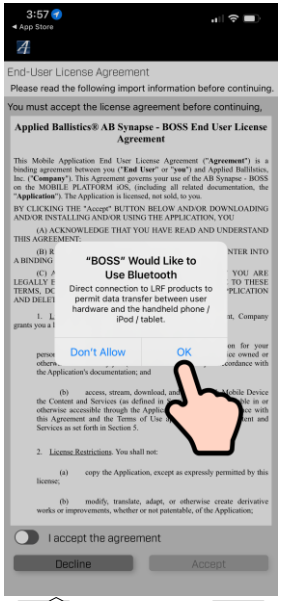
Check in Settings on your Android or iOS device to make sure that Bluetooth is on. If Bluetooth is off, switch it on.

Pair Your Smart Phone with Your ESPY

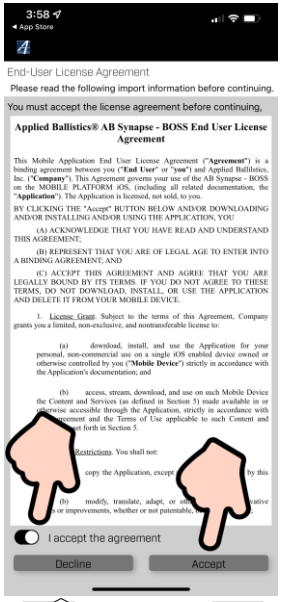
1. On your smartphone, open the AB Synapse – BOSS App.
2. For the first time of use, the app will ask to use your location, Bluetooth and to accept the end-user agreement.
3. Select “Allow While Using App”, so the app will automatically get the climate info from the internet. (Pic 1)
4. Select “OK” when the app asks to use Bluetooth. (Pic 2)
5. Read the agreement. Turn on “I accept the agreement” and then select “Accept”. (Pic 3)
6. Tap “PAIR DEVICE” (Pic 4), activate your ESPY by pressing the RANGE button, hold down the MENU key for 2 seconds to enable Bluetooth. Your ESPY should be listed as “LRF-0000” under “SELECT DEVICE” in the app (Pic 5).
7. Touch “LRF-0000”, You will be prompted to look through your ESPY for a 2-digit PIN number (Pic 6). Type this PIN number into the open dialogue box within the App （Pic 7）. The PIN in your ESPY and the PIN entered on your smartphone must match. Tap “OK” (Pic 7) and then “CONTINUE” (Pic 8) to complete the pairing operation.
8. Select “OK” to update the bullet library if there are any new updates available (Pic 9).

Note: After the initial Bluetooth pairing, your ESPY will automatically connect again anytime the rangefinder is powered on while the app is open.

Pic 1

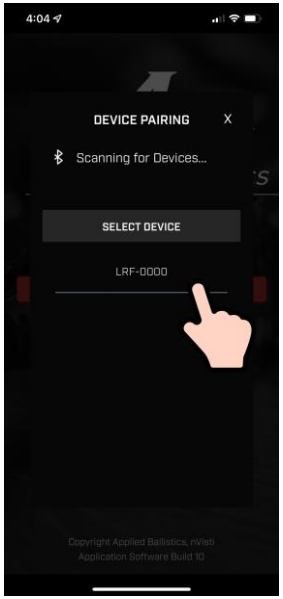


Pic 2

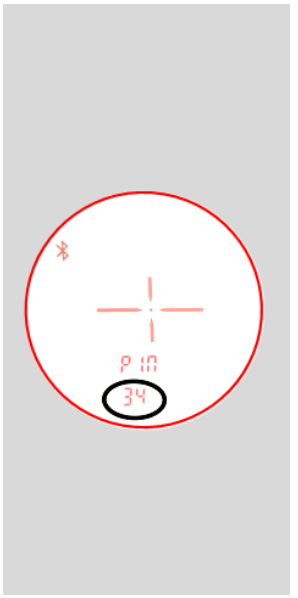


Pic 3

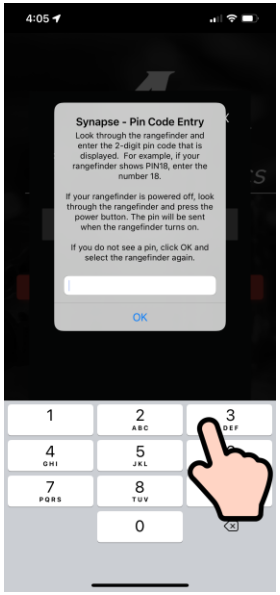
Pic 4



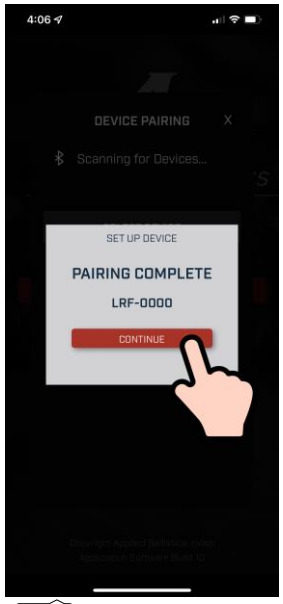
Pic 5



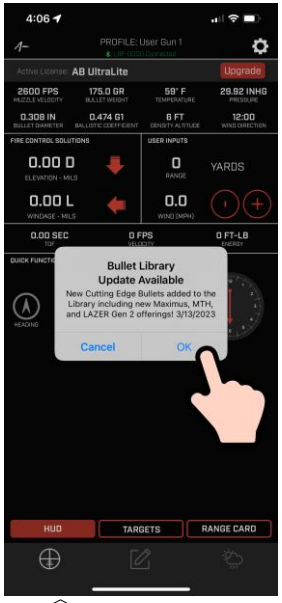
Pic 6



Pic 7



Pic 8



Pic 9

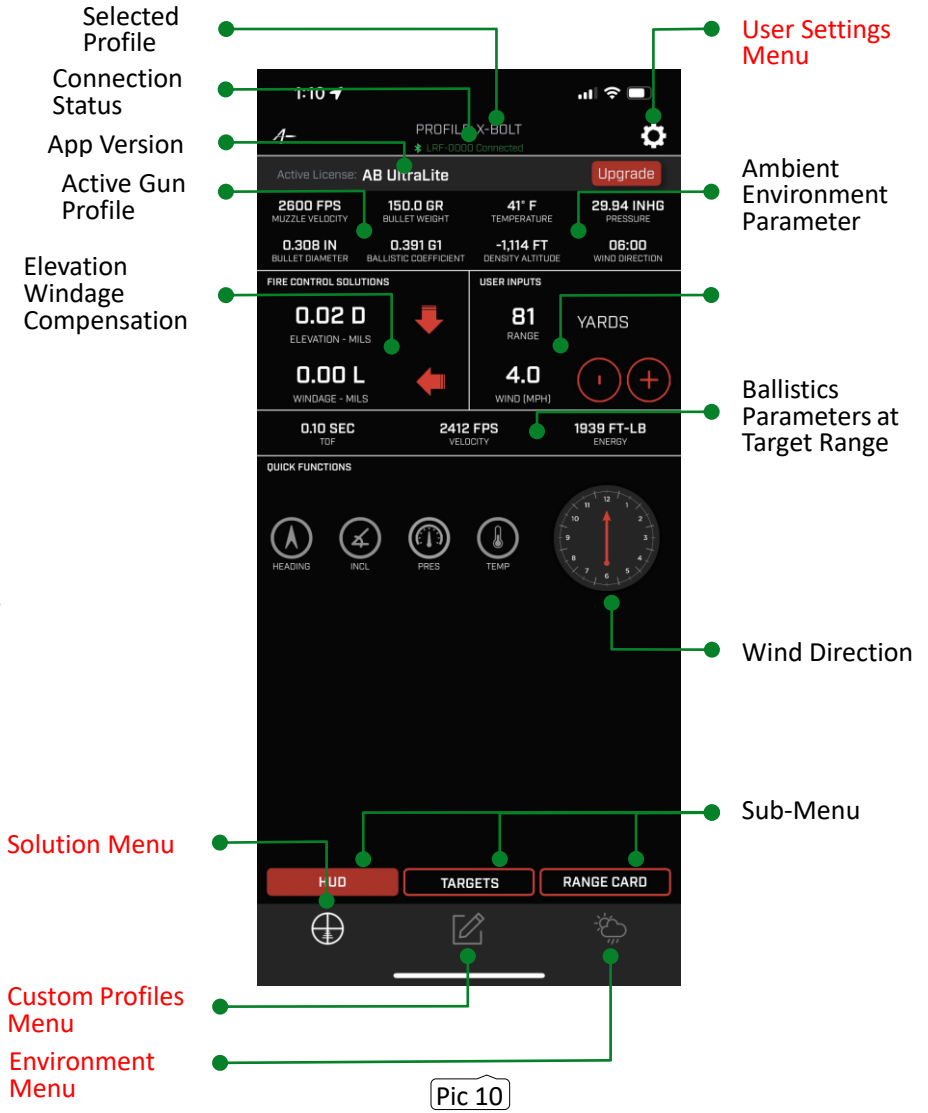
How to Configure the BOSS App

Open the BOSS app, you will be taken to the Heads-up display (HUD) under the Solution menu. The HUD displays all range, environmental and ballistic information (Pic. 10)

The main menu is on the bottom of the screen. From the left to the right, you will find 3 icons.
Solution
Custom Profiles
Environment

the User Settings icon is at the top right of the screen. You can change the reference units to your preference.
User Settings

HUD Display

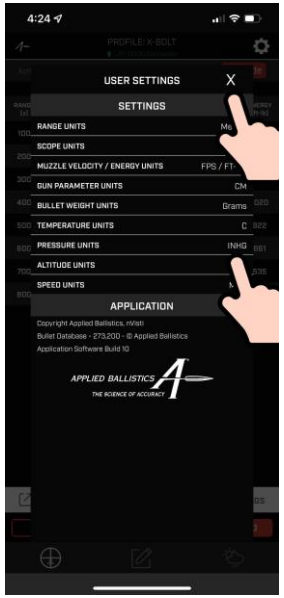


Pic 10

The following part will introduce how to set up the trajectory and environmental parameters. If your ESPY is turned on and paired, the modification in the app will be synchronized to the rangefinder immediately. Applications that edit on shutdown will be automatically transmitted to the next startup.

User Settings

Tap the “User Settings” icon at the top right of the screen to enter the user settings page.



Pic 11

You can toggle all fields by simply touching the units on the right, and then tap "X" to save (Pic 11). User Settings include:

1. Range Units (Yards, Meters)
2. Scope Units (MOA, MILS)
3. Muzzle Velocity Unit /Energy Units (FPS/FT-LB, MPS/J)
4. Gun Parameter Units (CM, Inches)
5. Bullet Weight Unit (Grains, Grams)
6. Temperature Units (F / C)
7. Pressure Units (MBAR, INHG)
8. Altitude Units (Feet, Meters)
9. Speed Units (KPH, MPH, M/S)

Solution Menu

There are 3 sub-menus under Solution, they are HUD (Heads-Up Display), Targets and Range Card.

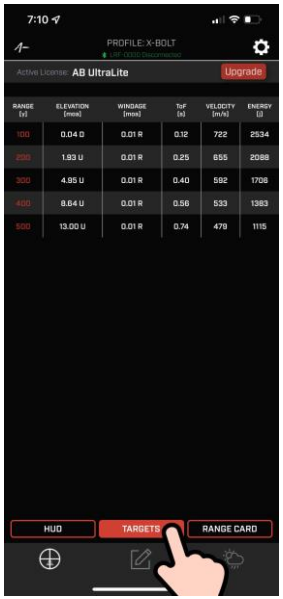
1. HUD

Tap “Solution” icon and select “HUD”. You will see displays of all range, environmental and ballistic information. It is also the page where the trajectory correction value displayed, which is calculated by the ballistic chip of the ESPY based on the data input from your smartphone. (Pic. 10)

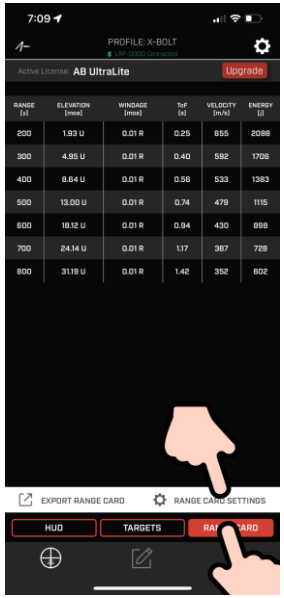
2. Targets

Tap “Solution” icon and select “TARGETS” to enter the distance to your intended targets in yards (in meters if you have changed it in “User Settings”) by tapping the red numbers under “Range” for any of 5 different targets. Enter the distance with the pop-up number keypad, then tap the “DONE” to confirm the range. (Pic 12)

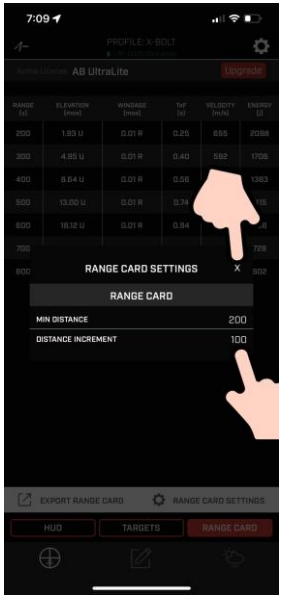
Note: Useful data provided within the app, not necessary for integration with the ESPY display.



Pic 12



Pic 13



Pic 14

3. Range Card

Tap “Solution” icon and select "RANGE CARD", then tap "RANGE CARD SETTINGS"(Pic 13), you can toggle through the numbers by touching them (Pic 14). Tap "X" to return to the main screen of the Range Card (Pic 14). The main screen will be updated

whenever the range card Settings are changed. Touch "Export Range Card", input your email address in the blank and then touch “Send Email”, you can send your custom Range Card data to your mailbox.

Note: Useful data provided within the app, not necessary for integration with the ESPY display.

Custom Profiles Menu

Tapping “Custom Profiles” Icon will take you to its main screen (Pic 15). You can configure up to 5 custom bullet profiles with ESPY 12 and ESPY 20. Only one profile can be active at any time and is denoted by Active File in red to the right of the screen.

The BOSS App comes with default 0.308 profiles. You can edit any profile by touching the profile name (Pic 15). Next, touch BULLET LIBRARY (Pic 16), then select a caliber (Pic 17) and bullet manufacturer (Pic 18). After selecting a bullet manufacturer, select the actual bullet you intend to use (Pic 19). Once selected G1/G7 Drag Model (Pic 20), you will return to the Gun Profile page. On this page, you can rename the profile by touching “User Gun 1” (Pic 21) and typing in a new name (Pic 22). In this example, we rename the profile to “308 Berger”.

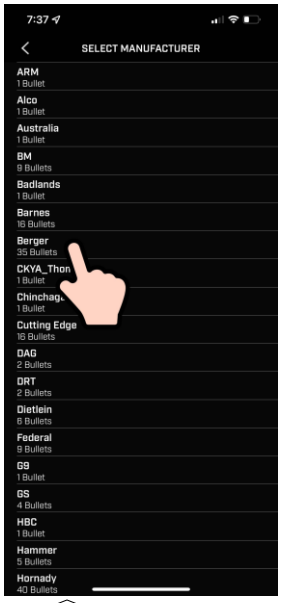
If the bullet you used is not in the BULLET LIBRARY. You can simply input these parameters by tapping the numbers in white.

Once done, tap the back icon (Pic 22) at the top left of the screen to the main screen of Custom Profiles and you will need to click on the red circle to the right of the profile (Pic 23) to activate this profile. In this example the new profile is called “308 Berger” - be sure to activate this profile.

Pic 15

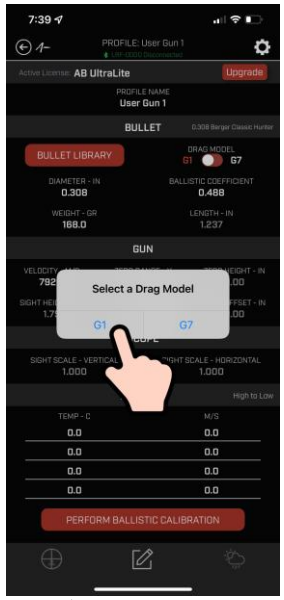
Pic 16

Pic 17



Pic 18

Pic 19

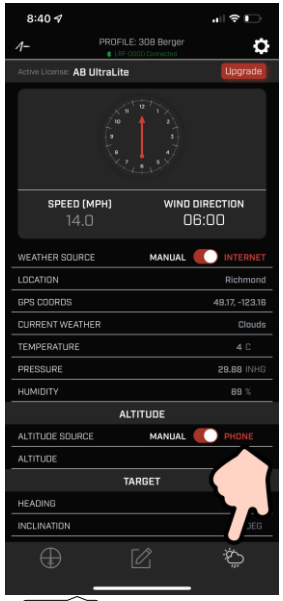


Pic 20

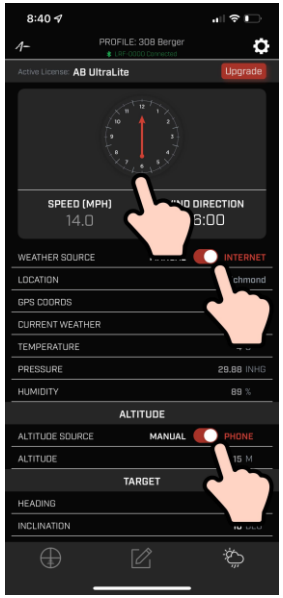
Pic 21

Pic 22

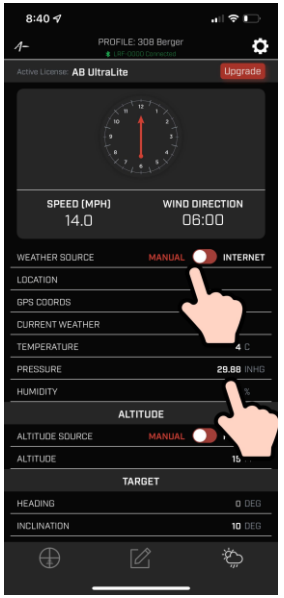
Pic 23



Pic 24



Pic 25



Pic 26

Pic 27

Note: Some items in the application may be grayed out, indicating that there are no user-selectable Settings. The grayed ballistics parameters CANNOT be unlocked by upgrading.

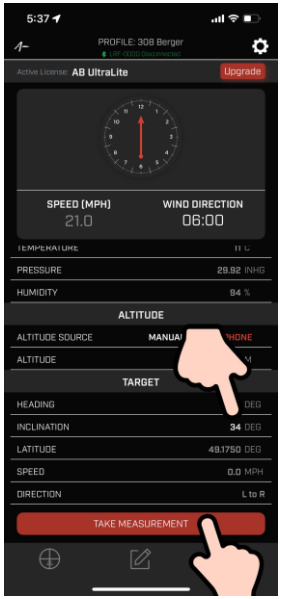
Environment Menu

Tap "Environment" icon (Pic 24) to enter the details of the current shooting position. These factors also affect bullet drop/compensation distance.

Slide weather Sources/Altitude Source to Internet/Phone (Pic 25). Your smartphone will automatically pull the local temperature and altitude from the closest weather station. If you are not in cell range you can manually update both temperature and altitude by touching on the white numbers in each field and manually updating these environmental conditions (Pic 26).

Wind direction must be manually entered by tapping the clock (Pic 25). Note that the wind direction is "based on the clock dials" rather than "based on the compass", where 12:00 represents the direction you are pointing your gun and 6:00 is right behind you.

You can use your smartphone to measure the angle of the target. Point your smart phone to the target, tap "TAKE MEASUREMENT", the result will appear to the right of the INCLINATION (Pic 27).



APP UPGRADE

ESPY 12 provides ballistic solutions out of the box to 875 yards at the Ultralite level and ESPY 20 to 1,500 yards at the Sportsman level. The app version of your ESPY CANNOT be upgraded to higher level because the rangefinder does not support longer distance measurement.

The “UPGRADE” button in the app is designed for future development.

CLEANING AND GENERAL CARE

The lens of ESPY is fully multi-coated for the highest light transmission. As with any multi-coated optical product, special care must be taken when cleaning the lens. Here are tips for cleaning your lenses properly:

- Blow dust or debris off your lenses (or use a soft lens brush).
- To remove dirt or fingerprints, wipe in circular motion with the microfiber cloth provided. Using rough cloth or unnecessary friction can scratch the surface of the lens and eventually cause permanent damage. The included washable microfiber cleaning cloth is ideal for regular cleaning of your optics. Simply breathe gently on the lens to provide a small amount of moisture, then wipe the lens gently with a microfiber cloth.
- For a more thorough cleaning, use photographic lens paper towels and photographic lens cleaning fluid or isopropyl alcohol. Apply the liquid to a cleaning cloth, not directly to the lens.

TROUBLESHOOTING

Do not disassemble your ESPY. Irreparable damage may result from unauthorized service attempts, which also void the warranty.

- If your ESPY does not turn on, display does not illuminate:

1. Press RANGE button.
2. Check and if necessary, replace battery. If unit does not respond to button presses, replace the battery with a good quality CR2 3-volt Lithium battery.

- If your ESPY powers down (display goes blank when attempting to power the laser):

1. The battery is either weak or low quality.
2. Replace the battery with a new 3-volt lithium battery (CR2).

- If target range cannot be obtained:

1. Make sure the display is illuminated.
2. Make sure that the RANGE button is being pressed.
3. Make sure that nothing, such as your hand or finger, is blocking the lenses at the front of your ESPY that emit and receive the laser pulses.
4. Make sure your ESPY is held steady while pressing RANGE button.

SAFETY AND PRECAUTION

- 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 eye protection is not needed.
- Use the correct battery (CR2) and proper battery orientation.
- Do not look at sun.
- Do not activate “MENU” or “RANGE” buttons while aiming at eye or looking into objective lens.
- Do not disassemble.
- Do not allow children to play with it.
- Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.

RANGEFINDING TIPS

Laser rangefinder emits invisible, eye-safe, infrared energy pulses. Sophisticated digital technology calculates the distance instantaneously by measuring the time it takes for each pulse to travel from the rangefinder to the target and back. The rangefinder's microprocessor results in instantaneous and accurate readings every time.

- Light colors will usually reflect better than dark ones.
- Be aware that snow, rain, and fog will have adverse effects on ranging ability.
- Shiny, reflective surfaces will usually reflect better than dull, textured surfaces. Animal hair will not reflect as well as a hard surface.
- Ranging under cloud cover can improve laser performance compared to bright sunny conditions.
- The position of the sun compared to the rangefinder and/or range target will greatly affect performance.
- Solid objects, such as a rock, will reflect better than bushes.
- Flat surfaces perpendicular to the laser pulse will reflect better than curved surfaces or surfaces angled in relation to laser pulse.
- Ranging over water can sometimes cause false reflections and readings.
- At longer distances, large objects will be easier to range than small objects.
- If you are having difficulty ranging an animal or object, try ranging a different nearby object, use the Scan feature to pan back and forth while watching for changes in range number, or switch to ELR mode.