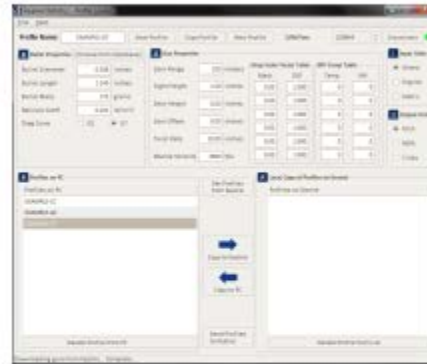




APPLIED BALLISTICS PROFILE LOADER APPLICATION INSTRUCTIONS



KestrelBallistics.com

800.784.4221

Overview

The Applied Ballistics Profile Loader has been created to easily create profiles which contain both bullet and weapon information. Profiles may be created on a PC through the application or directly on the Kestrel and transferred via the software. Through this application, the entire Applied Ballistics Custom Drag Curve database as measured by Bryan Litz is available (*only applies to 4500 AB models or 5700 Kestrel Elite models*). By using these drag curves instead of the G1 or G7 BC, greater accuracy can be achieved at farther distances.

Note: In order to connect to the device,

4500 Series: a Bluetooth connection or Kestrel Computer Interface device must be utilized.

*5700 Series: The **USB cable MUST** be used. This program does not work with Bluetooth with the 5700 series. Please plug in USB cable to Kestrel and computer **first** before opening program.*

These instructions do not cover installing the Bluetooth or the Kestrel Computer Interface / USB Cable. Instructions for both are located on the Kestrel Ballistics Web Site.

Choosing the Correct Version of the Profile Loader (4500 Series Only)

In order to ensure compatibility between the Applied Ballistics Profile Loader and the Kestrel device, you must use the correct version of the Profile Loader. The Kestrel firmware version is shown as the device starts (“Iss. 4.xx”) and the version of the profile loader can be determined by selecting the About menu option. If you need an older version of the Profile Loader, please contact techsupport@nkhome.com.

Kestrel Firmware Version	Applied Ballistics Profile Loader Version
4.76	Build 024
4.78 through 4.92	Build 033
4.93	Build 042 or higher

Choosing the Correct Version of the Profile Loader (5700 Series Only)

In order to ensure compatibility between the Applied Ballistics Profile Loader and the Kestrel device, you must use the correct version of the profile loader. The Kestrel firmware version is shown on the Kestrel by going to the Main Menu->About->Version->FW. If you need an older version of the Profile Loader, please contact techsupport@nkhome.com.

Kestrel Firmware Version	Applied Ballistics Profile Loader Version
1.01 through 1.12	Build 042
1.13 and above	Build 074

Migrating Profiles from an Older Version of the Profile Loader

Over time, the Kestrel firmware has updates and so does the Applied Ballistics software. To migrate existing profiles from pre-existing versions of the profile loader, the following steps are recommended.

- 1) *If upgrading from version 4.76 only* - Use Build 024 of the Profile Loader to connect to the Kestrel running version 4.76 of the firmware
- 2) Download the Profiles from the Kestrel to the PC and ensure that they are listed in the **Profiles on PC** by using the **Copy to PC** button.
- 3) Navigate to the folder where the profile loader is located and create a copy of the **Profiles** folder on your desktop.
- 4) Download Build 074 of the profile loader to your computer and extract to the desired location.
- 5) Navigate to the folder where the new profile loader is located.
- 6) Move the contents of the **Profiles** folder on your Desktop (Step 3) into the new profile loader folder. ***If going from older Builds, just copy the profiles over without uploading them first.***
- 7) Upgrade the Kestrel firmware per the instructions on the Nielsen Kellerman web site to version latest firmware.

Name	Date modified	Type	Size
Device	10/22/2013 1:02 PM	File folder	
Files	10/22/2013 1:02 PM	File folder	
Profiles	10/22/2013 2:47 PM	File folder	
Launch AB Profile Loader	4/30/2013 12:00 PM	Shortcut	2 KB

The update is now complete and Build 074 of the profile loader will work with the updated firmware.

To transfer from a 4500 to a 5700, please see this help document:

http://www.nkhome.com/pdfs/How_to_transfer_gun_profiles_from_4500_series_to_5000_series.pdf

Creating a New Profile and Selecting a Bullet from the Database

When the application is launched, a default profile is created. The default profile is referred to as UNSAVED to help remind users that the current profile is not saved and additionally, the **Profile Name (1)** label is turned red. The **Profile Name (1)** will always turn red when the user has made a change to the profile and the current changes are not yet saved.

To create a new profile and select a bullet from the database:

- Click the **New Profile (2)** button – Note that the **Profile Name** has turned red and the name is **UNSAVED**.
- Click the **Choose from Database (3)** button and a new dialog box will appear for selecting a bullet from the database.

Please note: Custom Curves will not be unlocked until a Kestrel Elite or 4500AB is connected to the program for the first time.

Applied Ballistics - Profile Loader

File Help

Profile Name: (1) Save Profile Copy Profile (2) New Profile

B Bullet Properties [Choose from Database] (3)

Bullet Diameter: inches
 Bullet Length: inches
 Bullet Mass: grains
 Ballistic Coeff.: lb/in²
 Drag Curve: G1 G7

G Gun / Scope Properties

Zero Range: meters
 Sight Height: inches
 Zero Height: inches
 Zero Offset: inches
 SSF Elevaiton:
 SSF Windage:
 Twist Rate: inches
 Muzzle Velocity: fps

Drop Scale Factor Table

Mach	DSF
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000

MV-Temp Table

Temp	MV
0	0
0	0
0	0
0	0
0	0
0	0
0	0

Note: Temps should be ordered from high to low

I Input Units

Mixed
 English
 Metric

O Output Units

E Units: MIL clicks / MIL
 W Units: MIL clicks / MIL

P Profiles on PC

- Profiles on PC --
- 223 JP
- 243
- 260 AI
- 300Norma
- 6LMT6720
- AW-22LR
- AW-264
- BANSR252

Get Profiles from Kestrel
 Copy to Device
 Copy to PC
 Send Profiles to Kestrel
 Delete Profile from PC

P Profiles on Device

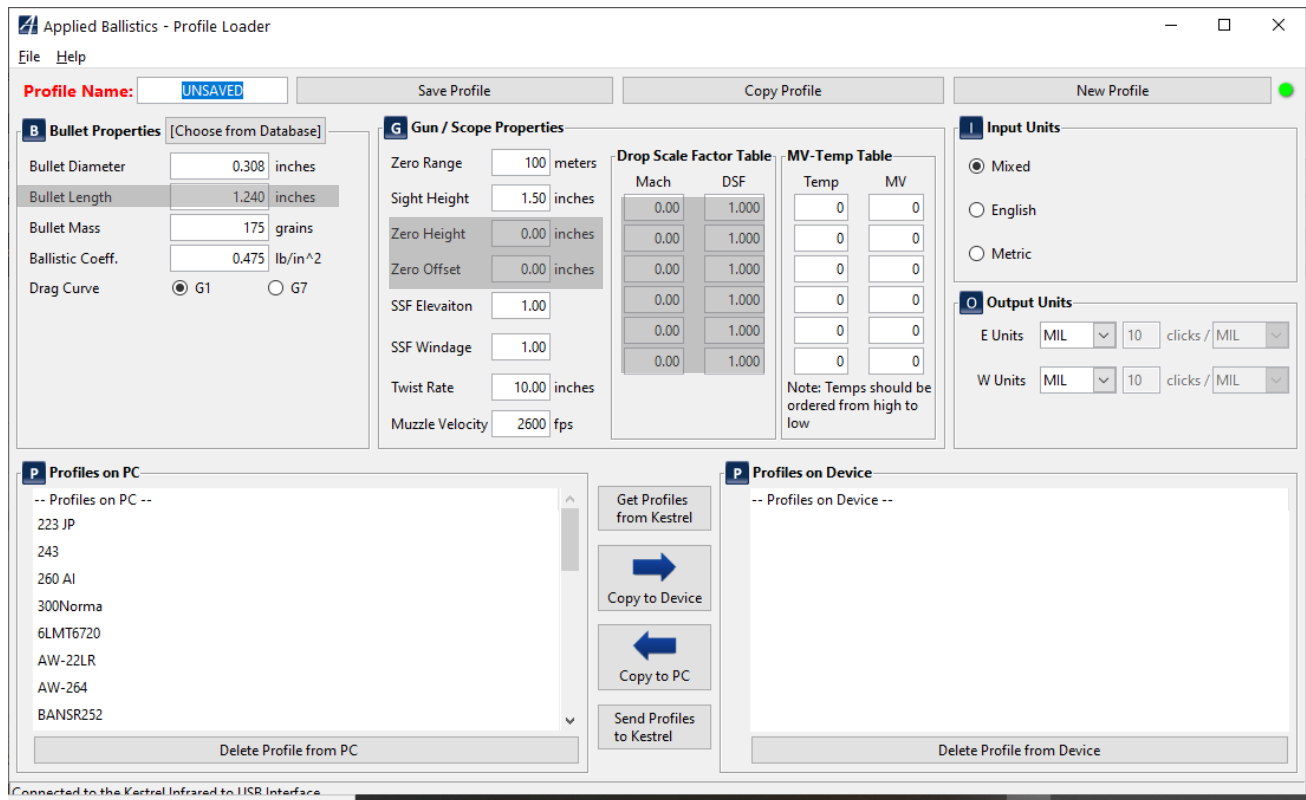
-- Profiles on Device --
 Delete Profile from Device

Connected to the Kestrel Infrared to USB Interface

Differences between the Kestrel 5700 and Kestrel 5700 Elite

The Kestrel 5700 is focused on high accuracy at the bullet's supersonic portion of the flight and optimized for minimal inputs required from the user. To create a profile, steps 1-3 are identical to the Kestrel 5700 Elite.

The grayed out items in the figure below show the inputs that will not be used by the Kestrel 5700. Any values entered into these boxes will be ignored. Additionally, custom drag curves are not supported by the Kestrel 5700. If a custom curve is selected from the profile loader, a default value of 1.0 will set for the ballistic coefficient. G1 and G7 ballistic coefficients from the bullet database are fully available for the Kestrel 5700. *SSF Elevation and SSF Windage are not currently implemented in the Kestrel devices.*

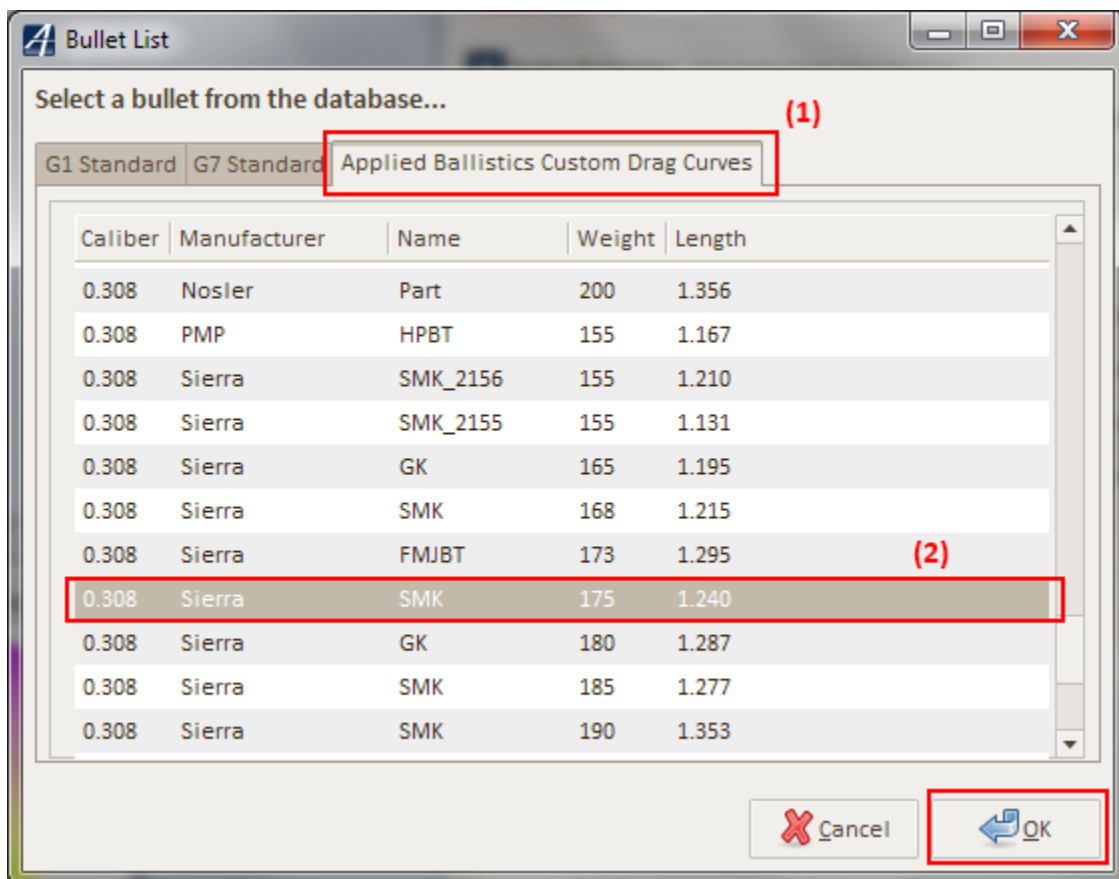


Selecting a Custom Drag Curve from the Applied Ballistics Library

The Applied Ballistics bullet database contains the ballistic Coefficients (BC) as measured by Bryan Litz for several bullets. However, to gain accuracy at extreme ranges, utilizing one of the **Applied Ballistics Custom Drag Curves (1)** is recommended.

To access a bullet from the database:

- Select either the **G1 Standard**, **G7 Standard**, or **Applied Ballistics Custom Drag Curves (1)** tab from the bullet database window.
- Select the bullet from the database by double clicking it or selecting it and clicking the OK button. In this case, we've selected the **175 grain 0.308" SMK (2)** custom drag curve.



Please note: A warning will appear whether you have a Kestrel 5700/5700 Sportsman OR a Kestrel 5700 Elite about the custom drag curves. Please ignore this warning if you have a 5700 Elite.

Applied Ballistics - Profile Loader

File Help

Profile Name: UNSAVED Save Profile Copy Profile New Profile

B Bullet Properties (Choose from Database)

Bullet Diameter: 0.308 inches
 Bullet Length: 1.560 inches
 Bullet Mass: 176 grains
 Ballistic Coeff.: 1.000 lb/in²

Custom Drag Curve Selected
 Ensure gun is named such that you will recall the custom curve that has been selected.

Custom curves cannot be used with the Kestrel Sportsman. The BC will be set to 1.0

G Gun / Scope Properties

Zero Range: 100 meters
 Sight Height: 1.50 inches
 Zero Height: 0.00 inches
 Zero Offset: 0.00 inches
 SSF Elevaiton: 1.00
 SSF Windage: 1.00
 Twist Rate: 10.00 inches
 Muzzle Velocity: 2600 fps

Drop Scale Factor Table

Mach	DSF
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000

MV-Temp Table

Temp	MV
0	0
0	0
0	0
0	0
0	0
0	0
0	0

Note: Temps should be ordered from high to low

I Input Units

Mixed
 English
 Metric

O Output Units

E Units: MIL 10 clicks / MIL
 W Units: MIL 10 clicks / MIL

P Profiles on PC

- Profiles on PC --
- 223 JP
- 243
- 260 AI
- 300Norma
- 6LMT6720
- AW-22LR
- AW-264
- BANSR252

Get Profiles from Kestrel
 Copy to Device
 Copy to PC
 Send Profiles to Kestrel

P Profiles on Device

-- Profiles on Device --

Delete Profile from PC Delete Profile from Device

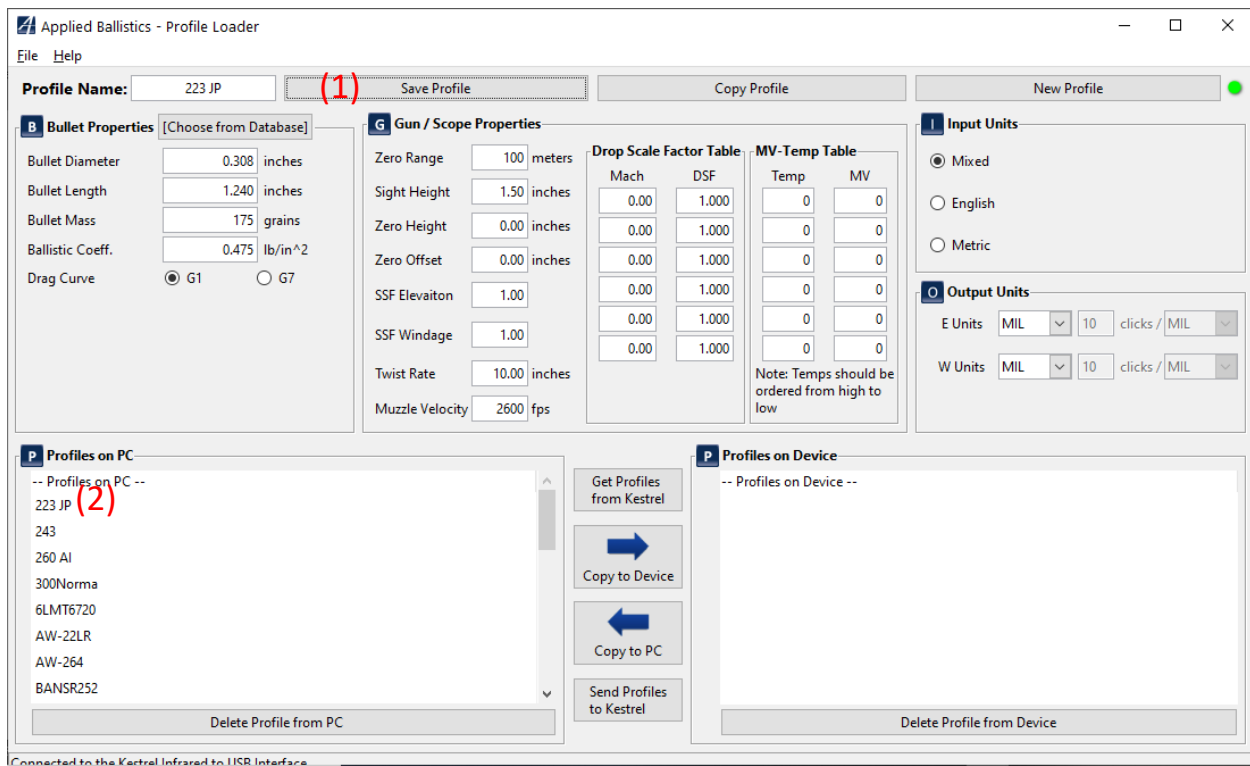
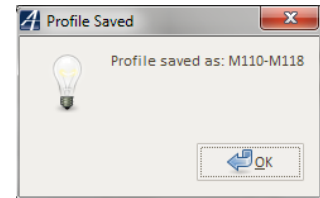
Connected to the Kestrel Infrared to USB Interface

Saving a Profile

Once the bullet has been selected from the database, the **Bullet Properties** will populate automatically. Alternatively, the bullet properties may be entered manually. The user is responsible for entering the **Gun Properties** as each weapon will be unique.

To save a profile:

- Provide **Profile Name** that is 10 characters or less that you will remember and be easily able to recall on the Kestrel Shooter's Weather Meter. Do not use special characters like "/" in the name.
- Click the **Save Profile (1)** button and the dialog box to the right will confirm that the profile is saved.
- The newly saved profile will be listed in the **Profiles on PC (2)**.



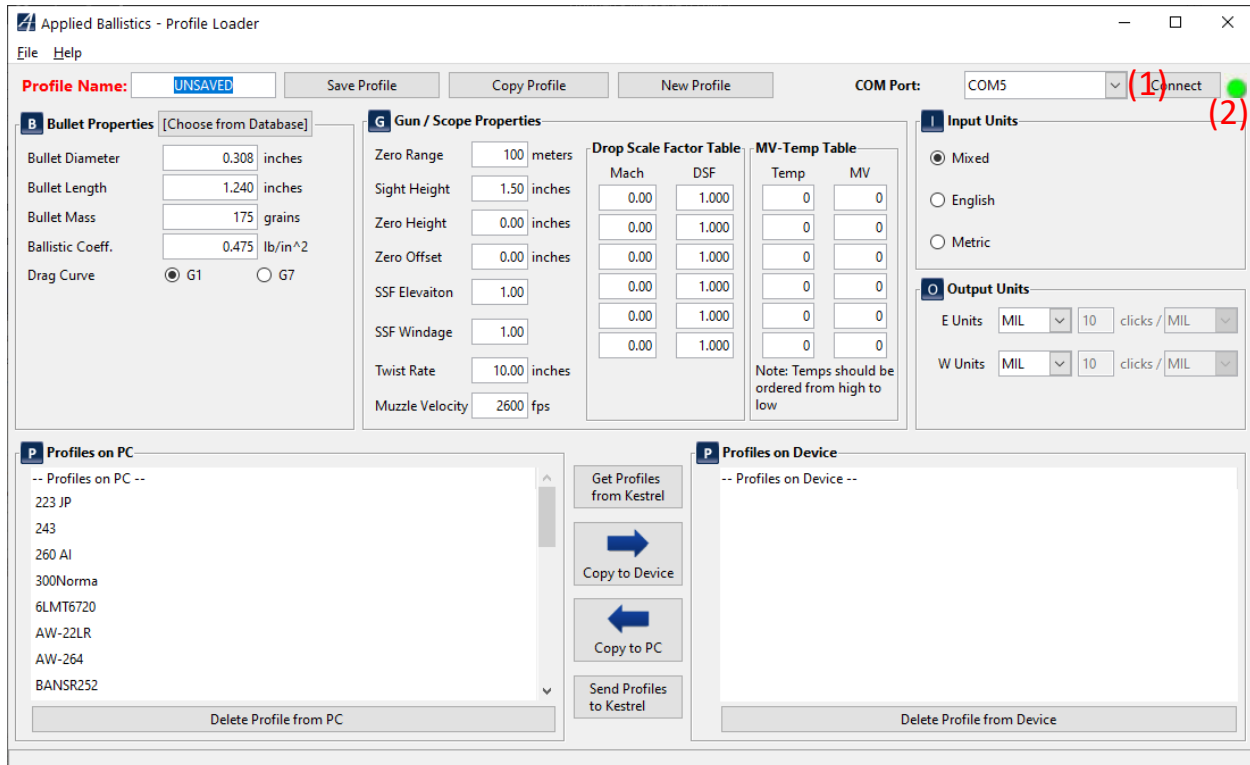
Connecting to the Kestrel 4500 Shooter's Weather Meter

To transfer profiles between the Kestrel Shooter's Weather Meter and the PC a Bluetooth connection or the Kestrel Computer Interface must be utilized. The Applied Ballistics Profile Loader utilizes the COM port created by pairing the Bluetooth device or by the installation of the Kestrel Computer Interface. Once

the device has been paired or the drivers installed, launch the application (consult user manual and Nielsen-Kellerman web site). Otherwise, the application will not detect the newly created port.

To connect to the Kestrel 4500 Shooter’s Weather Meter:

- Select an existing COM port from the drop down list and press the **Connect (1)** button. (Not necessary for the 5700 series units)
- The application indicates if it was able to connect to the Kestrel Shooter’s weather meter if the light turns from red to green **(2)**.



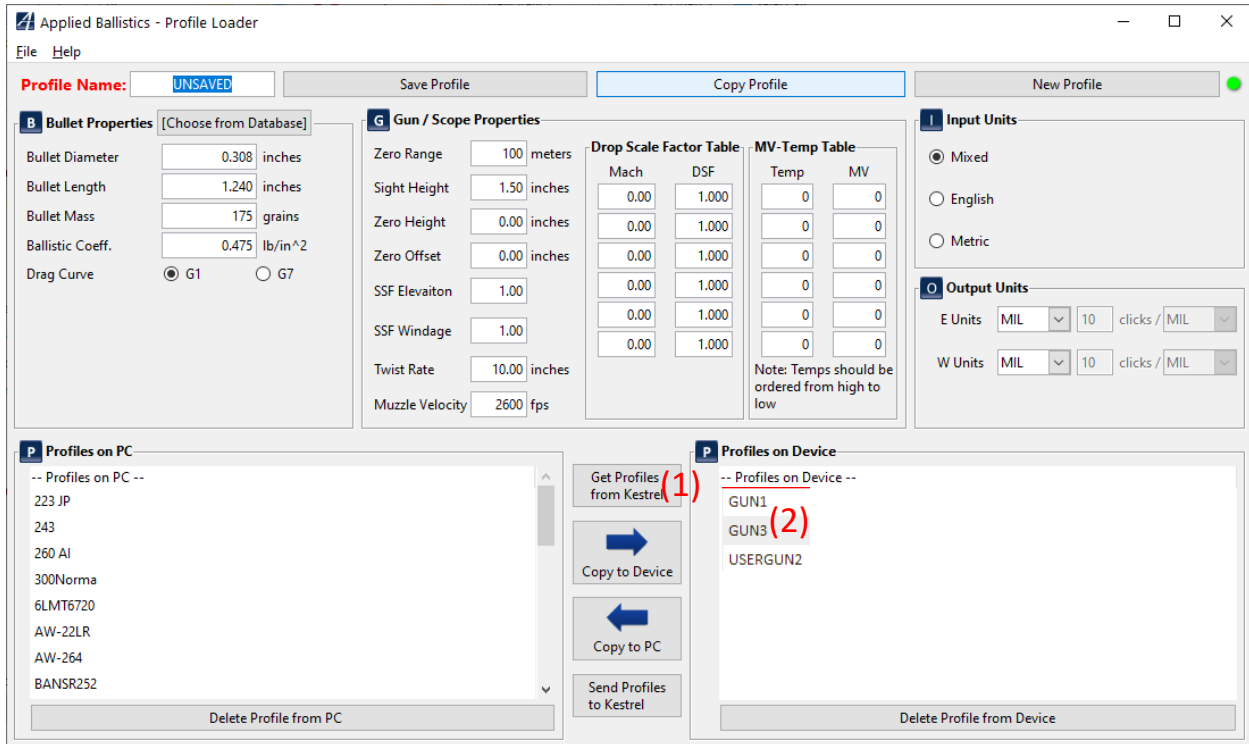
Downloading Profiles from the Kestrel Ballistic Meters

Several profiles may already exist on the Kestrel Ballistic Meter and should be transferred to the PC for storage and backup.

To download profiles from the Kestrel to the PC:

- Click on the **Get Profiles from Kestrel (1)** button.
- A dialog box will appear with the progress of the transfer from the Kestrel to the PC.
- Once the transfer is complete, all downloaded profiles will appear in the listing under **Profiles on Device (2)**. Keep in mind that you are only editing a local copy of the profile listing within

the application and not yet editing the profiles directly on the Kestrel. Profiles are NOT saved to the computer until they appear under **Profiles on PC** section.



Copying Profiles from the Kestrel Ballistic Meter to the PC

Once profiles have been downloaded from the Kestrel Ballistic Meter to the PC, they may be copied for local storage on the PC.

To copy a profile from the Kestrel to the PC:

- Select the profile of interest from the **Profiles on Device (1)** listing.
- The bullet and gun properties shown in the application will indicate that the new profile is selected.
- Click the **Copy to PC (2)** button.
- The profile will now be shown in the **Profiles on PC** listing (3).

Applied Ballistics - Profile Loader

File Help

Profile Name: **UNSAVED** Save Profile Copy Profile New Profile

B Bullet Properties [Choose from Database]

Bullet Diameter: 0.308 inches

Bullet Length: 1.240 inches

Bullet Mass: 175 grains

Ballistic Coeff.: 0.475 lb/in²

Drag Curve: G1 G7

G Gun / Scope Properties

Zero Range: 100 meters

Sight Height: 1.50 inches

Zero Height: 0.00 inches

Zero Offset: 0.00 inches

SSF Elevaiton: 1.00

SSF Windage: 1.00

Twist Rate: 10.00 inches

Muzzle Velocity: 2600 fps

Drop Scale Factor Table

Mach	DSF
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000
0.00	1.000

MV-Temp Table

Temp	MV
0	0
0	0
0	0
0	0
0	0
0	0

Note: Temps should be ordered from high to low

P Profiles on PC

-- Profiles on PC --

GUN1 (3)

GUN3

USERGUN2

Delete Profile from PC

Get Profiles from Kestrel

Copy to Device

Copy to PC

Send Profiles to Kestrel

P Profiles on Device

-- Profiles on Device --

GUN1 (1)

GUN3

USERGUN2

Delete Profile from Device

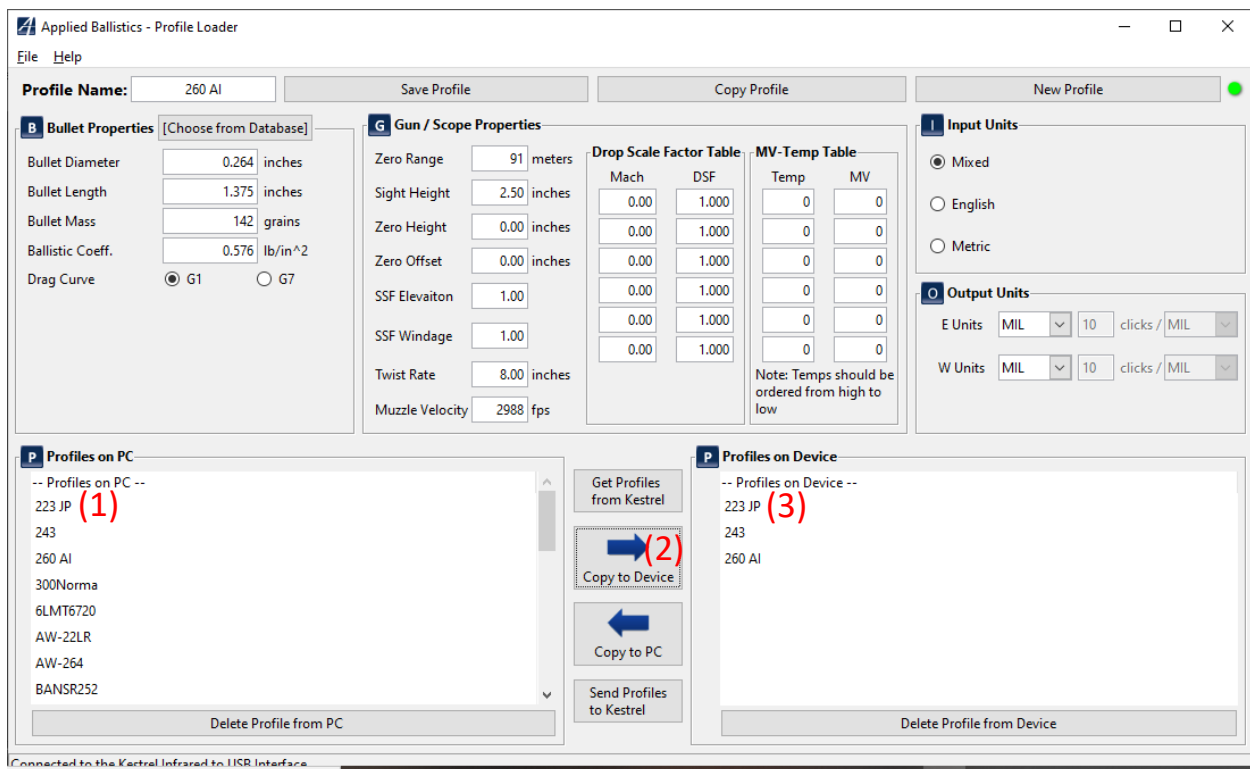
Copying Profiles from the PC to the Kestrel Ballistic Meter

Up to 30 profiles may be copied onto the Kestrel 5700 Elite/4500AB and 3 profiles can be copied onto the Kestrel 5700/Sportsman.

To copy a profile from the PC to the Kestrel:

- Select the profile of interest from the **Profiles on PC (1)** listing.
- The bullet and gun properties shown in the application will indicate that the new profile is selected.
- Click the **Copy to Kestrel (2)** button.
- The profile will now be shown in the **Local Copy of Profiles on Kestrel listing (3)**.

Note: The profiles have not yet been uploaded and the copy of the profile is only a working copy within the PC application until the profiles are uploaded.

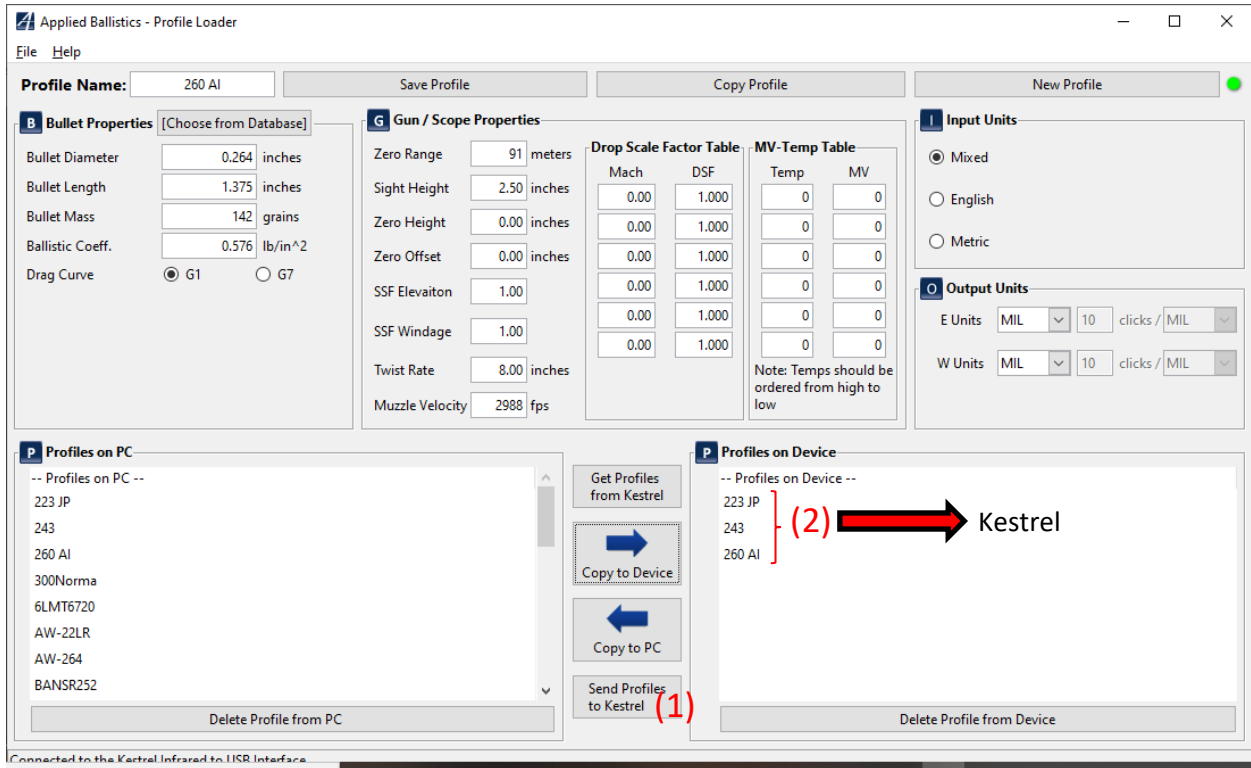


Uploading Profiles to the Kestrel Ballistic Meter

Once the profiles have been copied within the application from the PC to the Kestrel Ballistic Meter, it is necessary to upload all of the profiles to the device to store them. When the upload begins, all current profiles on the device are erased and replaced with those selected within the application.

To upload profiles from the PC to the device:

- Click on the **Send Profiles to Kestrel (1)** button.
- A dialog box will appear with the progress of the transfer from the PC to the Kestrel.
- Once the transfer is complete, the Kestrel should have all the profiles stored on it for use.



Deleting Profiles from the PC and Kestrel Ballistic Meter

At any time, profiles may be deleted from the PC or Kestrel.

To delete a profile:

- Select the profile from either the PC or Kestrel listing **(1)**.
- Ensure that the profile of interest is shown in the **Profile Name (2)**.
- Click on the **Delete from PC** or **Delete from Device Button (3)**. Deleting from Device, does NOT delete from the Kestrel itself, it only deletes it from the temporary storage box on the right. You can go into the Kestrel to delete profiles directly or overwrite them with new profiles to delete.
- A confirmation dialog box will appear that will ask to confirm that the profile should be deleted. Click **OK** to delete the profile or **Cancel** to cancel the operation.