NightForce Ballistic Reticle Selection

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1. Main Reticle Selection Screen

This web page is used to set up the basis for reticle selection by establishing the ballistic characteristics of the cartridge being used. The key parameters are the bullet weight (grains), ballistic coefficient (G1), and the muzzle velocity (ft per second).

Bullet weight – enter the value directly into the box or look up the ammunition manufacturer's information by pressing the **FACTORY LOADS** button.

Ballistic coefficient – if the **FACTORY LOADS** function was used the Bullet weight, Ballistic coefficient, and Muzzle velocity boxes will be filled in. If not, the BC value can be entered directly into the box or it can be obtained by pressing the **BULLET DATA** button to look up the bullet manufacturer's data.

Muzzle velocity – this can be entered directly into the box or it can be looked up by pressing the **FACTORY LOADS** button.

Additionally the following basic information has been predefined.

Altitude – 2000 ft. (where the reticle design was tested and confirmed),

Sight height above the bore – 1.8 inches (is the most common height for NightForce scopes with 50 mm or smaller objective lenses).

The use of **standard conditions** at 2000 feet has been specified.

With the basis for selecting a ballistic reticle now established the next step is to advance to the Reticle Selection screen by pressing the **NEXT** button.

When the reticle selection process is completed, pressing the **EXIT** button will advance you to the www.NightForceOptics.com web site home page.

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2. Reticle Selection Screen

This web page is used to perform the reticle selection process. Upon starting the screen the ballistics characteristics defined on the main web page are used to calculate the best reticle for the default scope selection (NXS 2.5-10x32) shown in the SCOPE SELECTION box.

The optimum reticle choice is shown in the RETICLE SELECTION box.

A message will be displayed underneath the BEST RETICLE SELECTION button to indicate how the statistically optimum reticle selection characteristics can be achieved by using the 200 yard sight in bar at the distance specified in the message.

Manual operations:

Scope selection is made by clicking on the desired scope from the SCOPE SELECTION pull down list. The new selection will be shown in the box when the pull down list is closed. At this point the reticle selection list in the RETICLE SELECTION will be updated if necessary and a new optimum reticle choice will be determined automatically.

Reticle selection is made by selecting a new reticle from the RETICLE SELECTION pull down list. The selection made this way is assumed to be non-optimal. The Reticle Spec parameters and the Impact Point Variance values will be updated. A message will be shown below the BEST RETICLE MATCH button. It shows "goodness of fit" statistical parameters **sigma** and **AveY**.

The **Impact Point Variance** values are the difference between the Reticle Spec hold over value and the actual bullet trajectory at the target distance for each of the reticle bars. Negative values indicate that the impact point will be below the aim point. Positive values indicate that the impact point will be above the aim point.

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AveY is the numerical average of the Impact Point Variance values and sigma is the root mean square of the Impact Point Variance values. An AveY value of zero is not necessarily a perfect fit. When sigma is zero there is a perfect fit.

BEST RETICLE MATCH is used to perform an Optimal Reticle Selection calculation. The choice is made by picking the reticle with the best possible "goodness of fit" (sigma and AveY) parameter values of all the reticles in the selection list. The Reticle Spec values and the Impact Point Variance values are updated. A message indicating how to achieve optimum sight in with the 200 yard bar is also displayed.

SIGHT IN BAR pull down list - NightForce operating instructions provided with scopes that have ballistic reticles state that the 200 yard reticle bar should be used to sight in at 200 yards. In some cases an improvement in "goodness of fit" can be achieved by using another sight in bar (typically 300 or 400 yards). By selecting another bar, the goodness of fit will be determined and displayed. The Impact Point Variance values will also be updated.

RETICLE IMAGE – pressing this button will advance you to a web page with an image of the selected reticle.

EXIT – pressing this button will advance you to the reticle selection main form web page.