PRIMARY ARMS OPTICS

SLx® 5-25x56

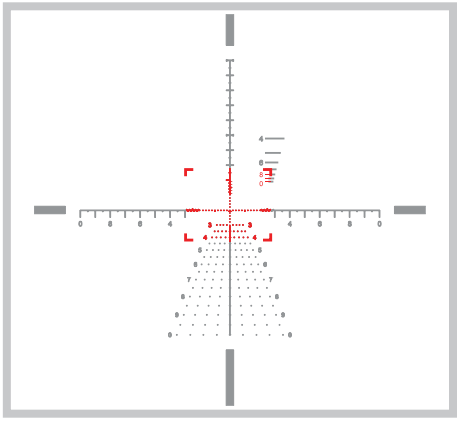
FIRST FOCAL PLANE
ACSS® APOLLO 6.5 CR/.224 V RETICLE MANUAL

THE ACSS APOLLO 6.5CR/.224V RETICLE

The ACSS Apollo is a dedicated 6.5 Creedmoor & .224 Valkyrie specific reticle that features easy to use bullet drop compensation and wind holds out to 1,000 yards. Overall, the reticle extends 10 MIL up, left, and right of the center chevron aiming point. Large hash marks are found in 1.0 MIL increments, with smaller marks between them at 0.5 MIL increments.

THE CHEVRON TIP

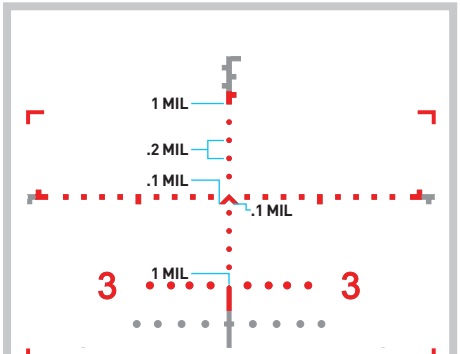
The ACSS Apollo uses a chevron as the center aiming point of the reticle. Adjust your Windage and Elevation knob positions so that the point of impact coincides with the tip of the chevron. Using the chevron tip allows for an infinitely small point of aim that never covers up the part of the target you want to hit, giving the chevron tip a precision advantage over traditional crosshairs or a center aiming dot.



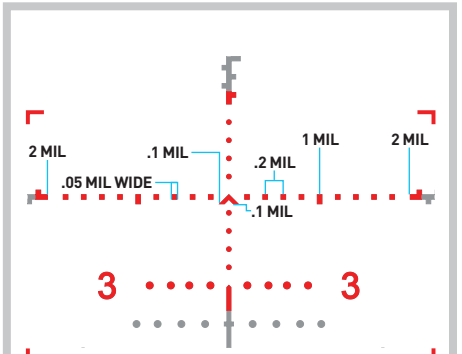
THE ACSS APOLLO CENTER SECTION

The chevron measures just 0.1 MIL down from center and 0.1 MIL to the left and right of center. Thus, the outer tips of the chevron legs are located 0.1 MIL from center, and 0.2 MIL apart from each other. To the left and right of center, boxes are located at 0.2 MIL intervals with a slightly larger rectangle at 1.0 MIL from center for easy navigation. Small dots (0.05 MIL wide) are spaced at 0.2 MIL intervals above and below center for a total of 1.0 MIL distance.

VERTICAL CENTER SECTION



HORIZONTAL CENTER SECTION



BALLISTICS CHART FOR THE ACSS APOLLO 6.5CR/.224 RETICLE

Instructions for using the ballistics chart: Find your caliber and bullet type. Match up your rifle's muzzle velocity with your altitude above sea level to find the proper zero distance and offset. Plus (+) and minus (-) numbers indicate desired bullet impact in inches above or below the point of aim during initial zeroing. The popular 6.5 Creedmoor bullet types and two .224 Valkyrie bullet types are shown in the chart.

ER stands for Effective Range of Apollo's BDC marks. Beyond the ER distance, bullet flight diverges from the BDC markings by 0.5 MIL or more. While hits are certainly possible on larger targets, precision shooting at small targets beyond the ER range is more difficult. After initial sight-in we recommend fine tuning point of impact at distances of 400-600 yards to maximize precision throughout the BDC.

Example: A 6.5 Creedmoor marksman using 140 grain Hornady ELD bullets at 2,650 fps, at 2,000 feet above sea level, needs to sight in 0.5" high at 100 yards.

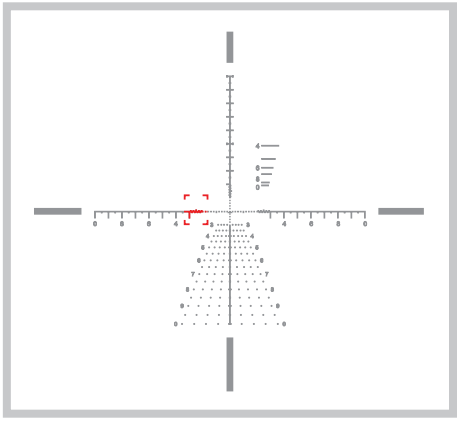
6.5 CR 140 Grain Hornady Extremely Low Drag (ELD)				
	Sea Level	+1,000 ft.	+2,000 ft.	+3,000 ft.
2,750 fps	100 Yard Zero	100 Yard Zero	100 Yard Zero -0.25"	100 Yard Zero -0.5"
2,700 fps	100 Yard Zero +0.5"	100 Yard Zero +0.25"	100 Yard Zero	100 Yard Zero -0.25"
2,650 fps	100 Yard Zero +1.0"	100 Yard Zero +0.75"	100 Yard Zero +0.5"	100 Yard Zero +0.25"
2,600 fps	50 Yard Zero	50 Yard Zero	50 Yard Zero	50 Yard Zero
6.5 CR 120 Grain Hornady AMAX				
	Sea Level	+1,000 ft.	+2,000 ft.	+3,000 ft.
2,900 fps	100 Yard Zero -1.0"	100 Yard Zero -1.0"	100 Yard Zero -1.25"	N/A
2,850 fps	100 Yard Zero ER 800y	100 Yard Zero ER 800y	100 Yard Zero ER 900y	100 Yard Zero ER 950y
2,800 fps	100 Yard Zero ER 800y	100 Yard Zero ER 800y	100 Yard Zero ER 800y	100 Yard Zero ER 800y
2,750 fps	100 Yard Zero +0.25" ER 600y	100 Yard Zero +0.25" ER 600y	100 Yard Zero +0.25" ER 650y	100 Yard Zero +0.25" ER 700y

6.5 CR 143 Grain Hornady Precision Hunter ELD-X				
	Sea Level	+1,000 ft.	+2,000 ft.	+3,000 ft.
2,750 fps	100 Yard Zero	100 Yard Zero -0.25"	100 Yard Zero -0.25"	100 Yard Zero -0.5"
2,700 fps	100 Yard Zero +0.5"	100 Yard Zero +0.5"	100 Yard Zero +0.25"	100 Yard Zero
2,650 fps	100 Yard Zero +1.0"	100 Yard Zero +1.0"	100 Yard Zero +0.75"	100 Yard Zero +0.5"
2,600 fps	50 Yard Zero	50 Yard Zero	50 Yard Zero	50 Yard Zero
.224 Valkyrie 90 Grain SMK, 88 Grain Hornady ELD Match				
	Sea Level	+1,000 ft.	+2,000 ft.	+3,000 ft.
2,750 fps	100 Yard Zero +0.25"	100 Yard Zero	100 Yard Zero	100 Yard Zero
2,700 fps	100 Yard Zero +1.0"	100 Yard Zero +0.5"	100 Yard Zero +0.5"	100 Yard Zero +0.25"
2,650 fps	50 Yard Zero ER 800y	100 Yard Zero ER 850y	100 Yard Zero ER 900y	50 Yard Zero
ER= Effective Range of BDC / Trajectory Alignment				

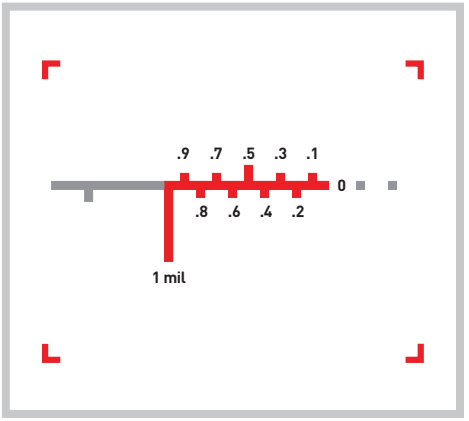
THE ACSS APOLLO OUTER SECTION

At 2 MIL distance left/right from center, the solid crosshair line begins, using alternating upper and lower marks forming a MIL ranging section. These can be used to range targets using extremely fine 0.1 MIL increments. At 3.0 MIL from center, the 0.5 MIL hash marks begin.

OUTER SECTION



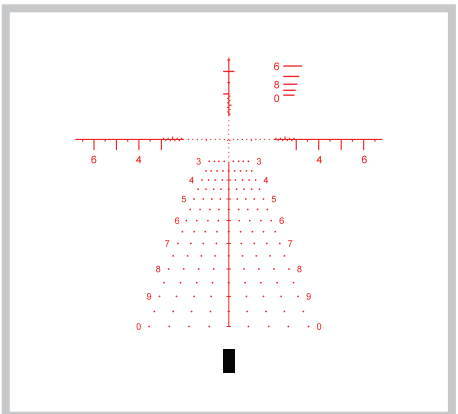
TENTH MIL SECTION



BULLET DROP COMPENSATION & WIND HOLDS

Below center, Apollo features a 6.5 Creedmoor & .224 Valkyrie specific bullet drop compensation ladder. Sighting in Apollo so that your rounds impact at the tip of the chevron at 100 yards, hold midway between the 2nd and 3rd dots underneath the chevron for 200 yards. The BDC begins at 300 yards. Hash marks located at increasing 50-yard intervals indicate bullet drop all the way to 1,000 yards, with numbers labeling every 100 yard increase. After determining the correct range to your target, simply aim using the mark that coincides with that range. The hash marks can be subdivided to make even more precise shots on targets at ranges in between those 50 yard increments. For example, if a target is located 475 yards away, aim using a point halfway between the 450 and 500 yard hash marks.

Wind holds are indicated by dots extending to the left and right of the BDC. They are calculated to represent the distance that crosswinds of 5, 10, 15, and 20 mph will push the bullet left or right. For a wind pushing left to right, use the dots on the right side of the BDC. For a wind pushing right to left, use the dots on the left side of the BDC. For example, if the target is located 700 yards away and a 10-mph wind is crossing from left to right, navigate to the "7" line and use the second dots to the right as your point of aim.

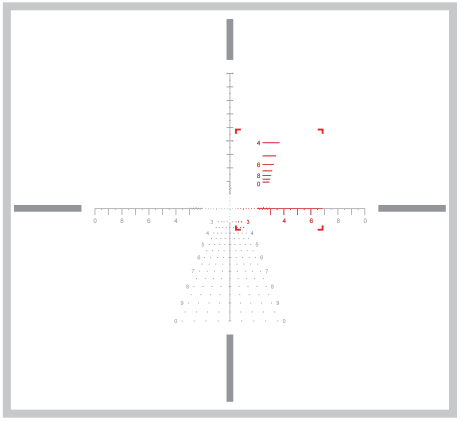


RANGING LADDER

Located high and right of center is the ranging ladder. Vertical ranging is calibrated for a 5'10" tall target. Looking through the scope at the target, line up the bottom of the target with the horizontal crosshair. The line that coincides with the top of the target indicates the distance to the target. For example, if the top of the target touches the line with a "4" next to it, the target is 400 yards distant. The ranging lines may be used as reference points to make more precise, yet quick ranging determinations. For example, a 5'10" target with its top midway between the "4" line and the "5" line will be approximately 450 yards away.

Horizontal ranging is calibrated for an 18" wide target. Simply line up the target's width with the appropriate line to determine range to target. For example, an 18" wide target that appears to be the same width as the ranging line with a "6" next to it will be 600 yards away. This method is useful when the target's height is partially obscured, as with a target in tall grass.

RANGING LADDER SECTION



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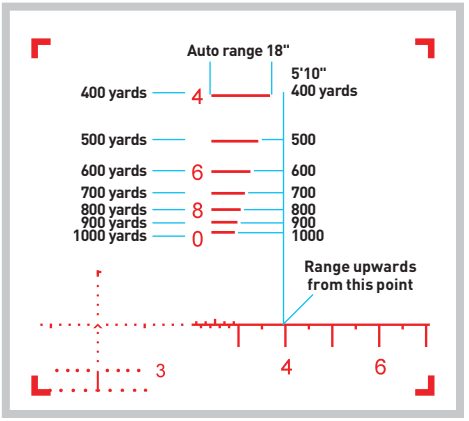
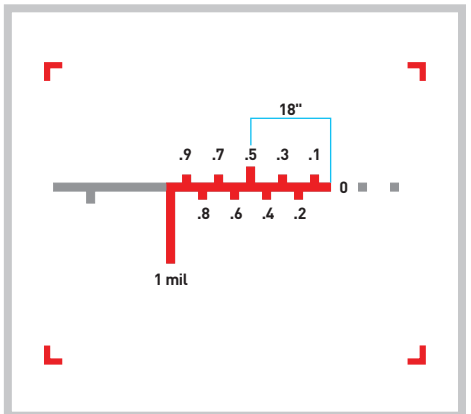


HOW TO RANGE ESTIMATE USING MILS

There are two common systems of measurement in the optics world: MOA and MIL. MOA reticles use Minute of Angle subtensions, which equal 1.047" at 100 yards and usually adjust in .25 MOA increments. MIL reticles use Milliradian subtensions, which equal 3.6" at 100 yards and usually adjust in .1 MIL increments. The ACSS Apollo 6.5CR/.224V reticle utilizes MILs with a first focal plane design, so your scope's MILs are accurate subtensions at any magnification power.

A Milliradian, by definition, is an angular measurement equaling 1/1000th the distance between the observer and the target. Simply put, 1 MIL represents 1 yard at 1000-yard distance. This ratio is true across all units, so 1 MIL equals 1 foot at 1000-foot distance, and 1 MIL equals 1 meter at 1000-meter distance. Because MILs are an angular measurement, MIL sizes scale with distance. When observing a target 500 yards away, 1 MIL is equal to 0.5yd. When observing a target 200 yards away, 1 MIL is equal to 0.2 yards. This is the basis of MIL-based ranging.

MIL ranging combines size estimation and simple math to deliver incredibly accurate range estimation. Many estimates can be done completely within one's head without the need for a calculator. Once you memorize the steps, you can quickly measure targets at any range with precision.



Here's an example of a ranging process:

You see a window at a distance, and you know that window is 18" tall (or 0.5 yard). This is your starting point.

Once you have an estimated size of target, find the size of the target in MILs by using your MIL grid for comparison. Because you're using a first focal plane scope, you can perform this estimate at any magnification, as your MIL subtensions are always accurate. In this example, you measure the window to be 1 MIL tall.

Once you have both the actual target size estimate and the MIL size estimate, the math is easy:

Target Distance in Yards = Target Size in Yards * 1,000 / Target MIL Measurement

For the window, this math equals: 0.5 yard * 1,000 / 1 = 500 yards. The window is 500 yards away.

The same formula can be used for meters. Simply use the target size in meters to receive a meters-based distance.

If you want to use target size in inches but still want range in yards, the math is harder, as you will have to convert between units. The easiest method is dividing 1,000 by 36 (in/yd) for your new constant. The resulting number is 27.8, which replaces 1,000 in the in-to-yd MIL formula.

Target Distance in Yards = Target Size in Inches * 27.8 / Target MIL Measurement

While this math is harder, it returns the same answer. For the window, this math equals: 18" * 27.8 / 1 = 500 yards. The window is still 500 yards away. Inches are best used when estimating the size for irregular shapes that cannot be easily expressed in yards or meters.

WEAPON				DATE	
SHOT NO.	DIRECTION/DEFLECTION	ELEVATION	RANGE	AMMO	DESCRIPTION

NOTES:

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NOTES:

PRIMARY ARMS

LIFETIME WARRANTY

Your Primary Arms SLx 5-25x56 Rifle Scope is covered by the Primary Arms Lifetime Warranty. If a defect due to materials or workmanship, or even normal wear and tear has caused your product to malfunction, Primary Arms will either repair or replace your product. You can find more details about our lifetime warranty at www.primaryarmsoptics.com.

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For more information on these optics, go to:
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