VORTEX®

RETICLE MANUAL

EBR-9
MRAD RETICLE

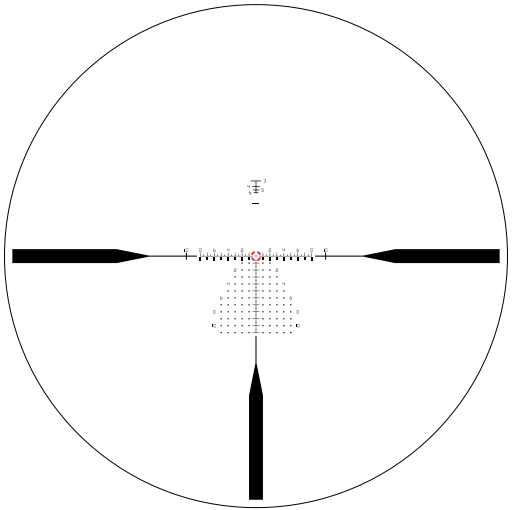
AMG® 1-10x24 FFP RIFLESCOPE

ENGINEERED FOR MASTERY YOU NEVER DREAMED POSSIBLE

MADE IN USA
WITH US AND GLOBAL PARTS

EBR-9 MRAD RETICLE

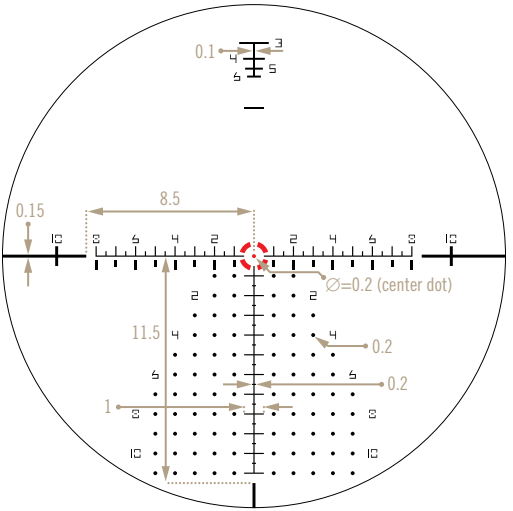
The AMG® 1-10x24 is equipped with the EBR-9 MRAD reticle. Designed to maximize long-distance shooting and ranging abilities, the EBR-9 MRAD reticle can be used to effectively determine ranges, holdovers, and windage corrections.



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

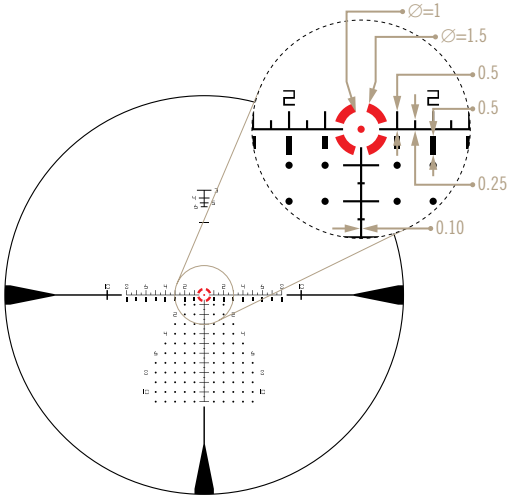
MRAD Subtensions

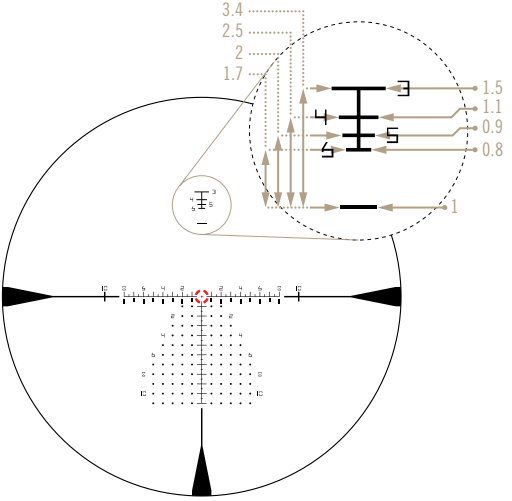
The EBR-9 reticle is based on Milliradian (MRAD) subtensions. MRAD is an angular unit of measurement used to account for bullet drop, wind corrections, and range estimation. 1 MRAD will correspond to 3.6" for each 100 yards.



MRAD values are correct on all magnifications.
Reticle image shown for representation only.

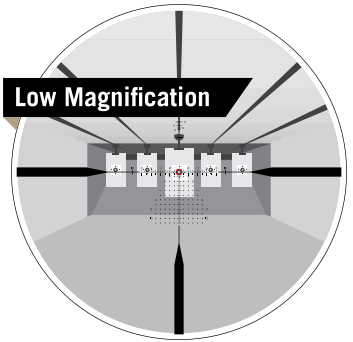
Reticle Subtensions (Continued)

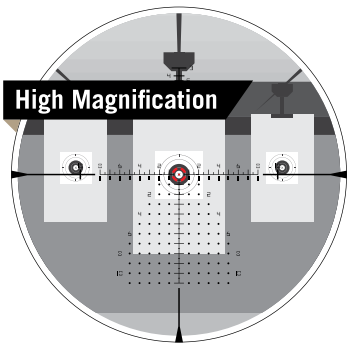




First Focal Plane Reticles

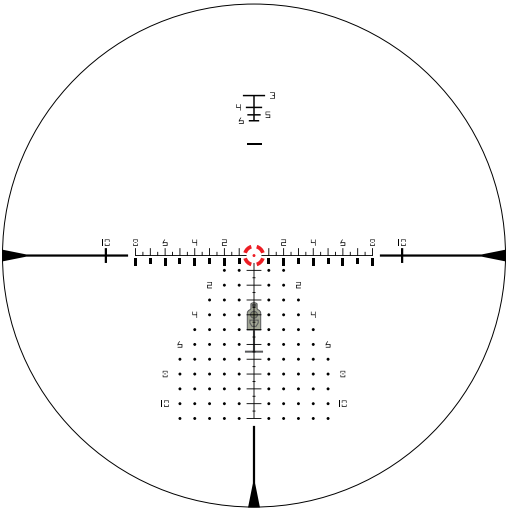
This riflescope features a first focal plane (FFP) reticle. FFP reticles are located within the riflescope near the windage and elevation turrets, in front of the erector tube. This style of reticle will appear to grow and shrink as you change the magnification.





Elevation Holdovers

Correcting for bullet drop is easy with the EBR-9 reticle's .5 MRAD hashmarks. The shooter uses the bullet's drop in MRAD and holds on the corresponding hashmark.



4 MRAD elevation correction for 600 yd. shot. No wind.

Note: You can also use the reticle like a ruler when sighting-in and while making on-the-fly corrections. Measure the difference between the bullet's point of impact and your point of aim and either hold on that respective hashmark or dial in the correction on the turret, using the value of the corresponding hashmark.

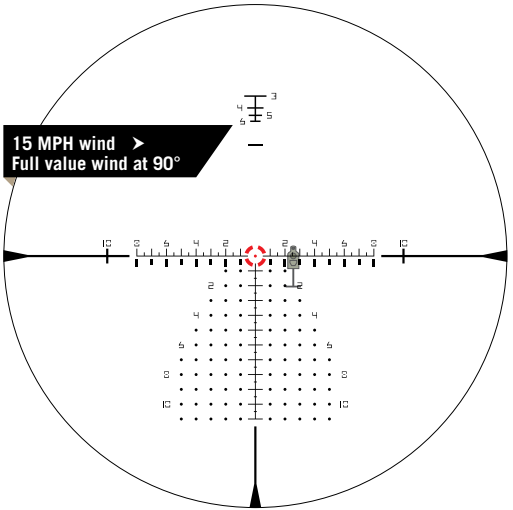
Windage and Moving Targets

Using the EBR-9 reticle for effective windage and moving target leads will require thorough knowledge of your weapon system's ballistics performance under varying conditions and experience in reading wind and target speed. As a bullet drops, it is important for the shooter to learn a particular weapon's windage/moving target corrections in MRAD rather than inches. Always hold the reticle into the wind.

Basic Windage Correction Holdovers

When dialing elevation, use the horizontal stadia line for windage or moving target lead corrections.

Example

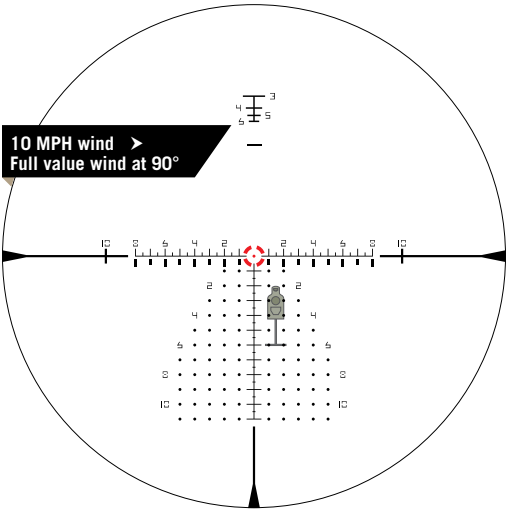


2.6 MRAD windage correction for 15 mph wind at 700 yds.
Elevation already dialed into turret.

Basic Windage and Elevation Correction Holdovers

When using the reticle for elevation correction rather than dialing, you can use the MRAD windage and elevations dots for easy holdovers. Remember to hold the reticle into the wind.

Example



3 MRAD elevation correction at 500 yds.
1.5 MRAD windage correction for 10 mph wind.

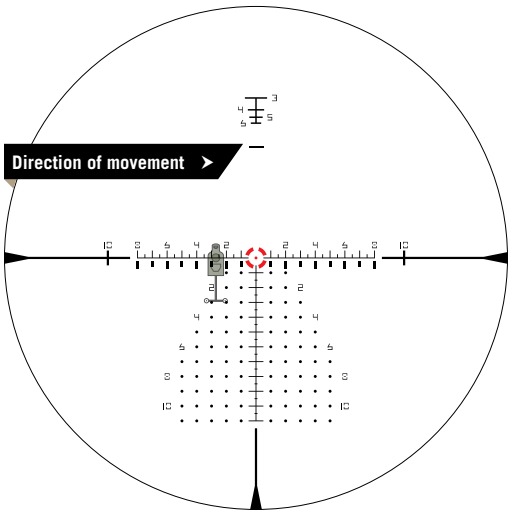

VORTEX
THIS ISN'T
ABOUT
STEPPING
UP
IT'S ABOUT
STEPPING
BEYOND

Basic Moving Target Lead Correction

When estimating moving target leads, use the MRAD marks on the horizontal stadia line. Estimating moving target leads will require knowing distance, wind speed, moving target speed, and total bullet flight time (including rifle lock time). Bullet flight times can be roughly calculated based on FPS velocities or a ballistic calculator.

Note: Correctly estimating moving target leads is difficult and requires practice and knowledge beyond the scope of this manual.

Example



2.7 MRAD correction for target moving at 3 mph.

RANGING

MRAD measurements are effective for ranging using a simple formula. To use this formula, the shooter needs to know the size of the target or nearby object in yards, inches, meters, or cm.

$$\frac{\text{Target Size (yds.)}}{\text{Measured MRAD}} \times 1000 = \text{Range (yds.)}$$

$$\frac{\text{Target Size (inches)}}{\text{Measured MRAD}} \times 27.77 = \text{Range (yds.)}$$

$$\frac{\text{Target Size (inches)}}{\text{Measured MRAD}} \times 25.4 = \text{Range (m)}$$

$$\frac{\text{Target Size (m)}}{\text{Measured MRAD}} \times 1000 = \text{Range (m)}$$

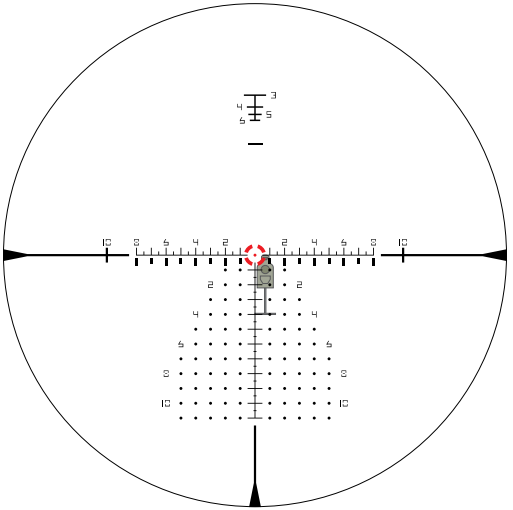
$$\frac{\text{Target Size (cm)}}{\text{Measured MRAD}} \times 10 = \text{Range (m)}$$

For the most accurate solution, use the longest dimension. If the object is taller than it is wide, it is best to use the object's height in the formula.

Using either the vertical or horizontal MRAD scale, place the reticle on a target of known dimensions and read the number of MRAD spanned. You will obtain the best results if measured to the nearest 1/10 MRAD.

Accurate measuring will depend on a very steady hold. The rifle should be firmly braced using a rest or bipod when measuring. Once you have an accurate MRAD reading, use the formula to calculate the distance.

Ranging Example

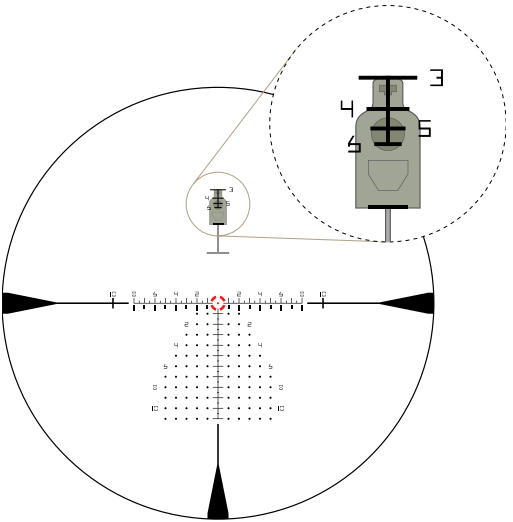


Ranging a 6' target (2 yds.) at 4 MRAD yields 500 yds.

$$\frac{\text{2 yds.}}{\text{4 MRAD}} \times 1000 = \text{500 yds.}$$

Ranging Feature

The ranging feature at the top of the reticle can be used to range a silhouette target. The horizontal lines correlate to the width of the shoulders of a silhouette target (18" across and 40" tall) at each distance. Place the horizontal hashmark at the base of the target. With the firearm supported, look at the top of the target to see which reference line the target aligns with. The 3, 4, 5, and 6 indicate the range in hundreds of meters.



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