



RETICLE MANUAL

# **EBR-8 BDC** **MOA RETICLE**

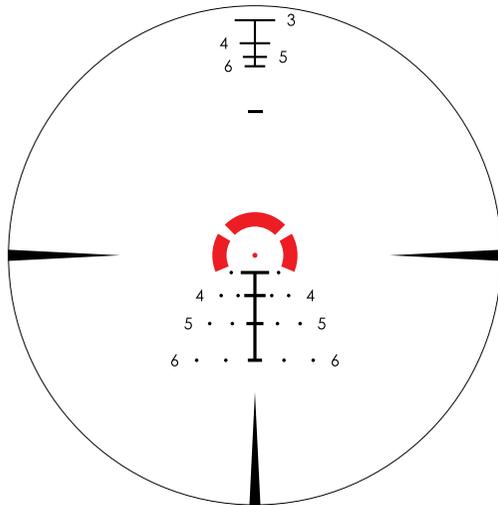
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**FIRST FOCAL PLANE  
ILLUMINATED**

## Illuminated EBR-8 BDC MOA Reticle

Our exclusive EBR-8 BDC MOA first focal plane, glass etched, illuminated reticle facilitates rapid shooting from point blank out to 600 yards with popular .223/5.56mm and .308/7.62mm loads.

This reticle also can be used with a wide variety of other calibers and loads using the BDC hashmarks.

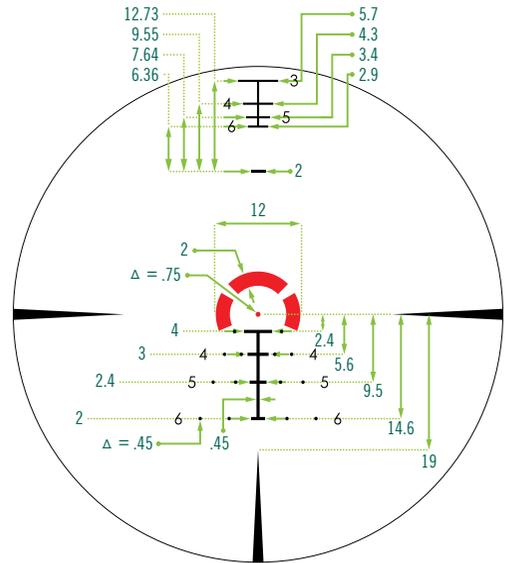


## MOA Subtensions

The EBR-8 BDC MOA reticle is based on Minute of Angle (MOA) subtensions. MOA is an angular unit of measurement used to account for bullet drop, wind corrections, and range estimation. 1 MOA will correspond to 1.047" for each 100 yards.

**Note:** Although 1 MOA is very commonly corresponded to 1" at 100 yards, this is not correct. 1 MOA at 100 yards equals 1.047". Calling 1 MOA, 1" per hundred yards may be acceptable for short distances but will result in a five percent error in ranging and holdovers. This could result in missed shots.

## Subtensions



**MOA values are correct on all magnifications.**

**First Focal Plane Reticles**

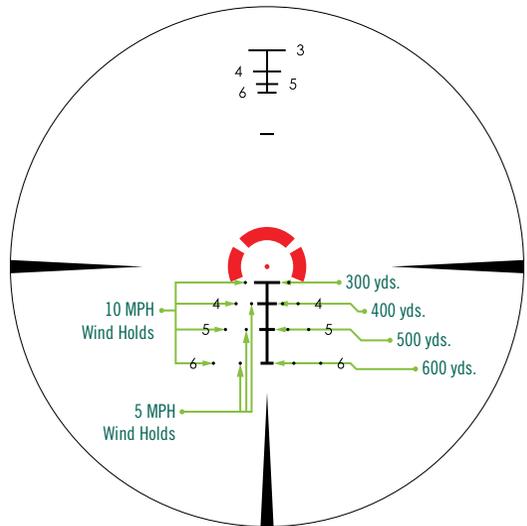
This riflescope features a first focal plane (FFP) reticle. FFP reticles are located within the riflescope near the windage and elevation turrets, in front of the erector tube. This style of reticle will appear to grow and shrink as you change the magnification.



**Using the Reticle for Bullet Drop Compensation**

Most rifles will work well zeroed at 50/200 yards using the center dot. Consult the riflescope product manual for the sight-in procedure. For most popular 5.56/.223 loads and .308/7.62mm loads, the center dot will then provide good accuracy from 20 to 220 yards.

Use the lower hashmarks when aiming at targets farther than your zero distance.



**STANDARD BULLET DROP FOR .223/5.56MM LOADS**

**.223/5.56mm, 60 gr., 3050 FPS Muzzle Velocity**  
 (Main crosshair zeroed at 50/200 yds.)

HASHMARK	SUBTENSION	DISTANCE	BULLET DROP
Zeroed	–	200 yds.	0"
1st	2.4 MOA	300 yds.	7.5"
2nd	5.6 MOA	400 yds.	23.5"
3rd	9.5 MOA	500 yds.	49.7"
4th	14.6 MOA	600 yds.	92.7"

**STANDARD BULLET DROP FOR .308/7.62MM LOADS**

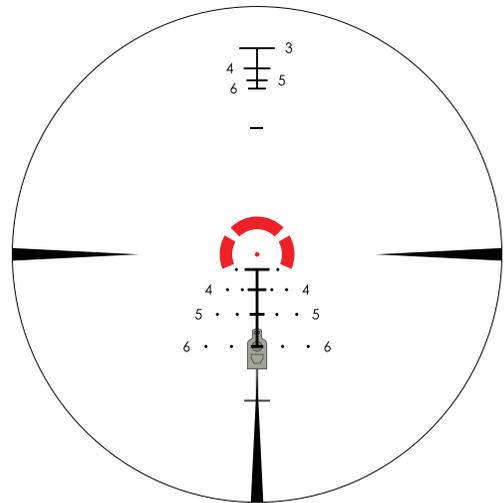
**.308/7.62mm, 168 gr., 2650 FPS Muzzle Velocity**  
 (Main crosshair zeroed at 50/200 yds.)

HASHMARK	SUBTENSION	DISTANCE	BULLET DROP
Zeroed	–	200 yds.	0"
1st	2.4 MOA	285 yds.	7.2"
2nd	5.6 MOA	385 yds.	22"
3rd	9.5 MOA	485 yds.	47.4"
4th	14.6 MOA	600 yds.	92"

**Note:** Bullet Drop Compensating (BDC) reticles are designed to get rounds on target quickly. Distances will be approximate, and will change depending on the gun, load, and environmental conditions. Using the MOA values for each hashmark you can figure out exactly where your specific load will line up with each hashmark. You are not limited to using a .223/5.56mm or .308/7.62mm. The Illuminated EBR-8 BDC MOA reticle is a first focal plane reticle, therefore all the hashmarks will be true throughout the entire magnification range.

The Illuminated EBR-8 BDC MOA reticle makes it easy to quickly select the correct bullet-drop reference. If the shooter prefers to dial for bullet drop using the Elevation Turret, knowing the bullet drop in MOA will allow for much easier adjustments.

If shooting a known range, use the hashmarks that correspond to your ammo's ballistics. Each hashmark from the center dot represents 100 yards, with common .223/5.56mm loads.



**Elevation correction at 600 yards and no wind (.223/5.56mm round)**

## PRECISION TECHNIQUE

If you wish to get the best accuracy, or have a caliber that is not listed, you can get more detailed ballistic data using the GeoBallistics® App.

For detailed instructions, scan for a video detailing how to build a profile within the GeoBallistics® App.



GEOBALLISTICS®



SCAN QR CODE TO GET STARTED.

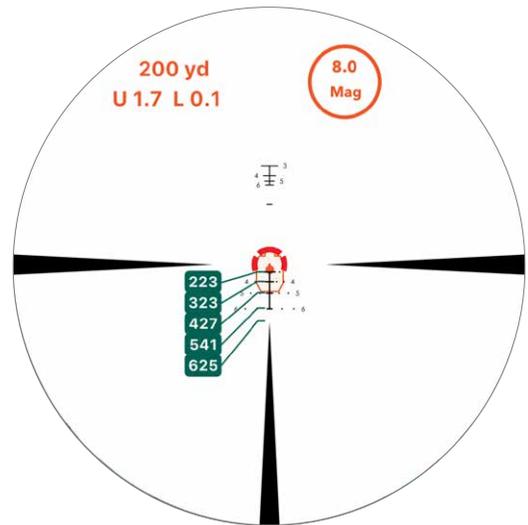
1. Now that you have built your profile, ensure your Vortex® riflescope and reticle have been selected within the Optic section of the rifle profile.
2. Set the range and input your environmental data within the app.
3. Open Reticle View from the GeoBallistics® quick-access menu.

**Note:** You can select your appropriate target from various shapes of steel and game targets from the drop-down menu.

**Note:** You can use the magnification slider to see how the target scales within the reticle.

**Tip:** For a more comprehensive ballistic solution, you can build your ballistic chart within the GeoBallistics® App. You can input your max shooting distance and the yardage increments you would like displayed. We recommend selecting a shooting distance farther than what you plan on shooting, and the smallest distance increments possible.

With GeoBallistics® Reticle View tool, you'll see exactly what each mark means—based on the ballistic performance of your cartridge—so you're never guessing at the range or in the field.



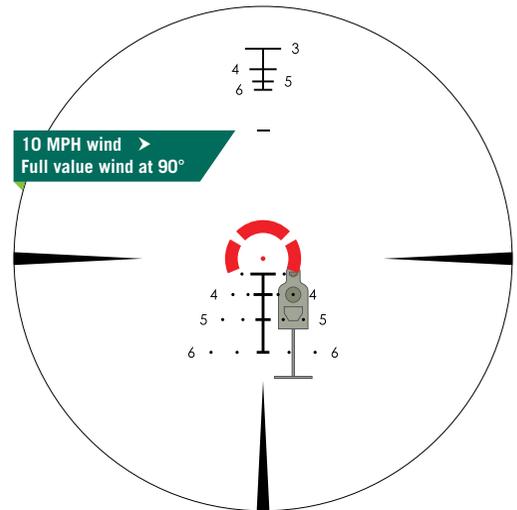
Example shown is for a 85 gr. .223 zeroed at 200 yards.

Range yd	Elev. MOA	Wind MOA	Vel. ft/s	Energy ft-lb
10.0	U 12.4	0.0	2577.6	1253.7
20.0	U 4.3	0.0	2555.3	1232.1
30.0	U 1.7	0.0	2533.1	1210.8
40.0	U 0.6	0.0	2511.0	1189.8
50.0	0.0	0.0	2489.0	1169.1
60.0	D 0.3	0.0	2467.2	1148.7
70.0	D 0.4	0.0	2445.5	1128.5
80.0	D 0.5	0.0	2423.9	1108.7
90.0	D 0.4	0.0	2402.3	1089.1
100.0	D 0.3	0.0	2380.9	1069.7
110.0	D 0.2	0.0	2359.6	1050.7
120.0	D 0.1	0.0	2338.4	1031.9
130.0	U 0.1	0.0	2317.4	1013.4
137.3	U 0.3	0.0	2302.0	1000.0
140.0	U 0.3	0.0	2296.4	995.1

### Windage and Moving Targets

Using the reticle for effective windage holds requires thorough knowledge of your weapon system's ballistic performance under varying conditions, and experience in reading wind. As a bullet drops, it is important to learn a particular weapon's windage corrections in MOA. Always hold the reticle into the wind when correcting for wind drift.

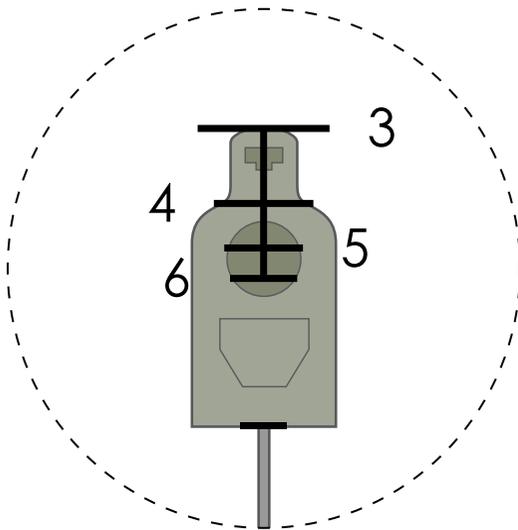
Each wind dot represents a 5 MPH crosswind hold for its respective distance.



Windage correction at 400 yards and 10 mph crosswind.

## RANGING

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 target's base. 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 yards.



Ranging a 300 yard target



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**Note:** The VIP® Warranty does not cover loss, theft, deliberate damage, or cosmetic damage not affecting product performance.

For the most up to date manual visit  
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