

SIGHT  MARK[®]



1-6x24 series
SM13038CR1
SM13038HDR



1-10x24 series
SM13138CR1
SM13138HDR



3-18x50 series
SM13039LR1
SM13039LR2
SM13039MR2



5-30x56 LR2
SM13040LR2

USER MANUAL

ABOUT SIGHTMARK®

While Sightmark's MAKE YOUR MARK tagline perfectly illustrates our mission to provide uncompromising accuracy in virtually any environment, to us, those three words mean quite a bit more.

MAKE YOUR MARK represents our commitment; first, to those who serve; second, to our Constitutional right to bear arms, the right ensuring all others remain intact; and finally, every single professional and recreational shooting enthusiast embracing and sharing our Pro-2nd Amendment lifestyle.

MAKE YOUR MARK also symbolizes our desire to build more than a brand people know they can trust. It represents our higher calling to build an honorable, unapologetic legacy, truly appreciative of the fabric of a free society to pass on to future generations. Only accomplishing the latter truly embodies the gravity of what MAKE YOUR MARK means to us.

In the spirit of gratitude for those who preserve freedom as we know it to be, MAKE YOUR MARK is a call to action. One we take seriously when it comes to developing products worthy of our brand... and our lifetime warranty. The same brand countless professionals rely upon for performance in the best... and most assuredly, worst of times.



Citadel Series Rifle Scope

Sightmark's line of Citadel Rifle Scopes are designed to help professional, competitive and recreational shooters climb to the top of their game with impenetrable confidence with feature-rich, premium-performing optics. Citadel rifle scopes are available in eight models: 5-30x56 (SM13040LR2), 3-18x50 (SM13039LR1/LR2/MR2), 1-10x24 (SM13138CR1/HDR) and 1-6x24 (SM13038CR1/HDR). Citadel long-range 5-30x56 and 3-18x50 models boast first focal plane optic systems, LR1, LR2 or MR2 reticles with ¼ MOA or .1 mil w/e adjustments. The 1-6x24 and 1-10x24 models feature a second focal plane lens system, CR1 or HDR reticle and ½-MOA w/e adjustments. All Sightmark Citadel rifle scopes have 30mm single-piece, aircraft-grade 6061-T6 aluminum tubes; premium, fully multi-coated glass; fine-etched, red-illuminated reticles; lens covers; throw levers; IP67 waterproof, dustproof, fogproof and shockproof reliability; and a lifetime warranty.

FEATURES:

SM13039LR1/LR2/MR2, SM13040LR2

- 6:1 Zoom ratio
- Exposed, low-profile locking turrets
- First focal plane reticle
- Red illuminated reticle
- Single-piece, 30mm tube
- Aircraft grade aluminum
- Hard anodized finish
- Waterproof, fogproof, shockproof
- Fully multi-coated optics

INCLUDES

- Sunshade
- CR2032 Battery
- Throw lever
- Lens caps

SM13038 series

- 6:1 Zoom ratio
- Capped, low-profile turrets
- Second focal plane reticle
- Red illuminated reticle
- Single-piece, 30mm tube
- Aircraft grade aluminum
- Hard anodized finish
- Waterproof, fogproof, shockproof
- Fully multi-coated optics

INCLUDES

- CR2032 Battery
- Throw lever
- Lens caps

SM13138 series

- 10:1 Zoom ratio
- Capped, low-profile turrets
- Second focal plane reticle
- Red illuminated reticle
- Single-piece, 30mm tube
- Aircraft grade aluminum
- Hard anodized finish
- Waterproof, fogproof, shockproof
- Fully multi-coated optics

INCLUDES

- CR2032 Battery
- Throw lever
- Lens caps

TECHNICAL SPECIFICATIONS	SM13038	SM13138	SM13039 LR1/LR2/MR2	SM13040LR2
Reticle type	CR1 / HDR	CR1 / HDR	LR1 / LR2 / MR2	LR2
Reticle color	Red	Red	Red	Red
Illuminated reticle (yes/no)	yes	yes	yes	yes
Reticle brightness settings	0-11	0-11	0-11	0-11
Magnification (x)	1-6	1-10	3-18	5-30
Objective lens diameter (mm)	24	24	50	56
Eye relief (in/mm)	3.5 - 2.9 / 88.9- 73.66	3.7 - 3.1 / 93.98- 78.74	4.6 - 3.7 / 116.8 - 94	4.9 - 3.7 / 124.5 - 94
Field of view (m @100m)	35.5 - 6	36.76 - 3.6	11 - 1.9	6.5 - 1
Field of view (ft @100yd)	106.7 - 18	110.3 - 10.8	33 - 5.8	19.5 - 3
Diopter adjustment (+/-)	+ 2 to -2			
Tube diameter (mm/in)	30	30	30	30
Parallax setting (yds)	100	100	15 - ∞	20 - ∞
Windage adjustment range	120 MOA	100 MOA	60 MOA / 17 MRAD	17 MRAD
Elevation adjustment range	120 MOA	100 MOA	60 MOA / 17 MRAD	17 MRAD
Adjustment value (one click =)	½ MOA	½ MOA	¼ MOA / .1 MRAD	.1 MRAD
Maximum Caliber	50BMG	50BMG	50BMG	50BMG
Battery type	CR2032	CR2032	CR2032	CR2032
Battery life (hours)	70 - 100	70 - 100	70 - 100	70 - 100
Focal plane	Second	Second	First	First
IP Standard (water rating)	IP67 - Submersible to 1m			
Lens coatings	Fully Multicoated	Fully Multicoated	Fully Multicoated	Fully Multicoated
Operating temperature (°F)	0 to 120	0 to 120	0 to 120	0 to 120
Length (in/mm)	10.7 / 272	11.26 / 286	13 / 330	14.9 / 380
Width (in/mm)	2.2 / 58	2.2 / 58	3.1 / 79	3.1 / 79
Height (in/mm)	1.7 / 42	1.7 / 42	2.2 / 56	2.2 / 56
Weight (oz)	16.2	17.5	26.1	27.5

DIAGRAM

1. Objective lens
2. Eyepiece (diopter adjustment)
3. Magnification adjustment ring
4. Elevation adjustment
5. Windage adjustment
6. Side focus dial (parallax adjustment)
7. Illumination dial
8. Battery cap
9. Throw lever
10. Sunshade



INSTALLING THE BATTERY

The Sightmark Citadel riflescopes are powered by a CR2032 battery. Should the reticle illumination grow dim or not illuminate, the battery needs to be replaced.

To install a new battery:

1. Unscrew the battery cap (8) on the illumination dial (7) counterclockwise with a coin or flathead screw driver.
2. Insert the new battery with the positive (+) side facing up.
3. Screw the battery cap on clockwise until firmly secure. Do not over tighten.

ILLUMINATION CONTROL

The Sightmark Citadel rifle scope uses an etched reticle. The reticle can be used without illumination and will appear black.

To activate the reticle illumination in red:

1. Rotate the illumination dial (7) either clockwise or counterclockwise. The dial is marked with the brightness setting ranging from 0 (off) to 11. Setting 11 is best for bright, outdoor environments. Setting 1 is best for low light environments.
2. Set the dial so the setting indicating desired brightness faces the shooter or the white indication mark on the housing.
3. To turn off, rotate the dial to the zero setting.

DIOPTER ADJUSTMENT

The Sightmark Citadel riflescope eyepiece (2) is designed to rotate to adjust for diopter. Diopter is the measurement of the eye's curvature. By rotating the eyepiece, the diopter is adjusted to properly match each person's vision. If the reticle does not appear clear, crisp, nor sharp, rotate the eyepiece until the reticle becomes clear and sharp. This adjustment should stay the same unless the riflescope's operator changes.



VARIABLE POWER ADJUSTMENT

To change magnification turn the magnification ring (4) to the desired level of power.



OPERATING THE WINDAGE AND ELEVATION ADJUSTMENTS

The Sightmark Citadel riflescope has finger adjustable elevation and windage adjustments (4, 5) with audible clicks. The Citadel 1-6x24 has capped turrets, the turret covers must be unscrewed in order to make adjustments. The Citadel 3-18x50 and 5-30x56 have locking, pop-up turrets. These turrets must be pulled up to disengage the locking mechanism. Once disengaged, adjustments can be made. When adjustments are finished, the turret can be pushed back down to lock the adjustment

In order to make windage and elevation adjustments:

1. Turn the adjustments in the appropriate direction needed to change the bullet's point-of-impact as indicated by the "UP" and "R" (right) arrows marked on the adjustments.

PARALLAX CORRECTION

The Sightmark Citadel riflescope is equipped with a side focus dial that is used to eliminate parallax and finely focus the image. Parallax occurs when the image of the target does not focus at the same optical plane as the reticle inside the riflescope. When parallax is present, the reticle appears to move over the target when the shooter's eye is not centered to the eyepiece. Adjusting the side focus dial properly will eliminate parallax.

To adjust the side focus dial:

1. Turn the side focus dial (6) until the image of the target is as sharp as possible. If you know the distance to your target, use the yardage marks on the dial as a starting reference.
1. Check for parallax by moving your head back and forth while looking through the scope. If the reticle appears to shift slightly adjust the focus dial until all shifting has been eliminated. Parallax is eliminated when there is no apparent shifting of the reticle.



MOUNTING

The Sightmark Citadel riflescope requires 30mm rings for mounting. For use on AR platforms a cantilever style mount is recommended. Mount the scope rings per the manufacturer's instructions. Do not perform a final tightening of the rings until you have thoroughly checked eye relief and reticle alignment. The riflescope should still be able to move fore and aft and rotate.

To achieve maximum eye relief:

1. Set the riflescope to its highest magnification.
2. Set the riflescope as far forward in the rings as possible then slowly move the riflescope closer to your eye. Stop moving the riflescope once a full field of view is visible.
3. Next rotate the riflescope to vertically align the crosshair. Use a reticle leveling tool if available.
4. Once alignment is complete, tighten the mounting ring's screws per the manufacturer's instructions. Do not over tighten.

BORESIGHTING and SIGHTING IN

Boresighting and test firing should be performed safely on a firing range. Laser boresights are a quick and accurate method for sighting in. The traditional method of boresighting is listed below.

1. When mounting the riflescope on a bolt action rifle, remove the bolt; or when mounting to a semi-automatic rifle, disassemble the rifle until there is a straight line of sight through the bore.
2. Use a target at least twenty yards to fifty yards away when sighting in the riflescope. Look through the bore of the weapon and locate the bull's-eye of the target.
3. Sight in the target through the bore and then make windage and elevation adjustments (see "Operating Windage and Elevation Adjustments" for instructions) to the riflescope until the reticle is centered on the bull's-eye.

BORESIGHTING and SIGHTING IN (CONTINUED)

To verify the riflescope is accurately sighted in, always fire a three-shot test group preferably using the same ammo manufacturer, grain, and lot number. 100 yards is the most common zero distance. For long range shooting, a 200 yard zero is generally preferred. Before firing, make sure the image is properly focused and no parallax is present.

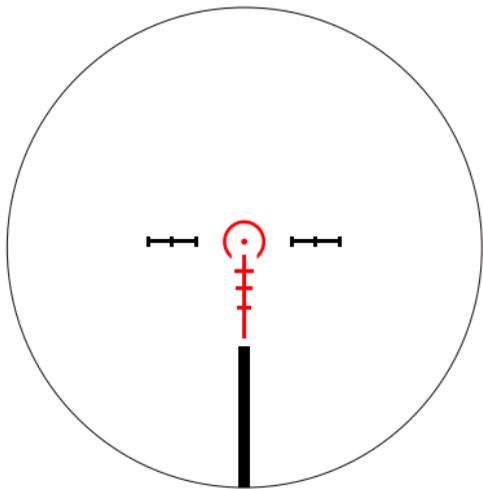
4. After firing a group use the center of this grouping to make adjustments to the elevation and windage, these adjustments will move your firearm's grouping to the center of the target.
5. Fire another three-shot test group to confirm adjustments and use the center of the new grouping to determine any final adjustments.

Once the riflescope is zeroed, the turrets can be reset to the "0" mark on your elevation and windage dial and the zero stop ring can be set on the elevation turret. **To do this:**

1. Use a large coin or flathead screwdriver to loosen the cap screw on the turret. Remove the cap screw entirely, but be careful not to lose it and the rubber gasket.
2. Once the cap is removed, lift the turret cap straight up and off of the turret being careful not to make any clicks.
3. Re-install the elevation turret cap, so that the "0" mark is aligned with the line indicator on the riflescope. Re-tighten the cap screw. Do not over tighten. The windage adjustment should be set to "0" as well.

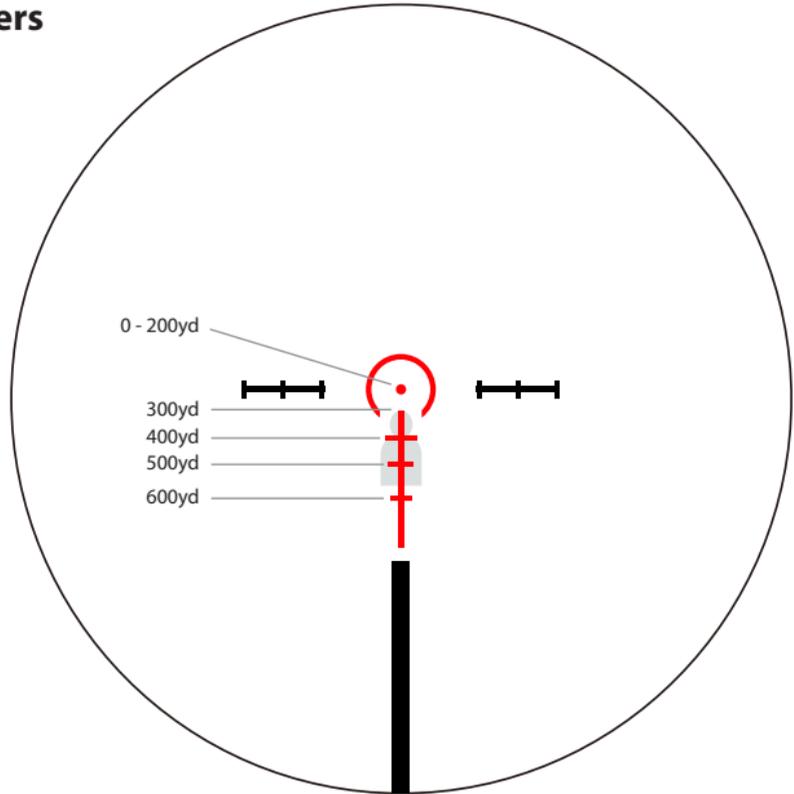
USING THE CR1 RETICLE

The Sightmark Citadel 1-6x24 riflescope was designed for 3 gun competition and shooting close to medium range targets. The CR1 reticle is a second focal plane, minute of angle (MOA) reticle. This reticle is calibrated for 5.56x45 / .223 Rem. 55gr FMJ ammo. The reticle was designed for a 100 yard zero. At 6x magnification, the 1 MOA aiming dot is used to engage targets from 0 to 200 yards. The reticle consists of a circle dot design for quick target acquisition in close range engagements. At 1x magnification, the outer circle will cover approximately 15 inches of a target at 25 yards. This is nearly equivalent to shoulder width of IPSC targets. Below the aiming dot, holdovers can be used to determine range of IPSC targets and perform ballistic holdovers out to 600 yards. Finally, the main horizontal subtension is scaled in 5 MOA increments (at 6x) and can be used for leads for moving targets.



Ranging and Elevation holdovers with the CR1 Reticle

The CR1 reticle can be used to estimate the range of IPSC targets based on the shoulder width of the target. Ranging is simple by matching the width of the IPSC target to length of the horizontal holdover points of the reticle. The following image shows approximately the size ratio for the distance of 400 yards. Note for a 300 yard target, the open base of the circle is used for ranging. By knowing the distance to your target, the holdover can then be used to compensate for bullet drop. Range estimation and holdovers must be done at 6x magnification. Note that for 300 yard holdover, the tip of the vertical subtension is used.



USING THE LR1, LR2 AND MR2 RETICLE

The Sightmark Citadel LR1, LR2, and MR2 are first focal plane reticles designed for medium to long range shooting. The LR1 riflescope uses a Minute Of Angle (MOA) reticle and adjustments. The LR2 and MR2 riflescopes use a milliradian reticle and adjustments. The reticles are first focal plane, thus will grow in size as magnification is increased and vice versa. The advantage is the dimensions of the reticle will be true at any magnifications. The reticles can be used to determine target range and perform shot holdovers for wind/drop compensation accurately at any magnification.

LR1 Reticle – the vertical and horizontal MOA scales are scaled in 2 MOA increments. The top, left, and right end of the vertical and horizontal scale are scaled in .5 MOA increments. The reticle's drop lines contain a series of reference dots for quick windage holdovers in 1 MOA increments. Finally, the aiming crosshair is .12 MOA.

LR2 Reticle – the vertical and horizontal MOA scales are scaled in .5 MIL increments. The top, left, and right end of the vertical and horizontal scale are scaled in .1 MIL increments. The reticle's drop lines contain a series of reference dots for quick windage holdovers in .2 MIL increments. Finally, the aiming crosshair is .3 MIL.

MR2 Reticle – the vertical and horizontal MOA scales are scaled in .5 MIL increments. The top, left, and right end of the vertical and horizontal scale are scaled in .1 MIL increments. The aiming dot is .1 MIL. The MR2 reticle does not have drop lines (Christmas tree dots) as in the LR1 or LR2 reticle. The reticle's vertical stadia can be used for elevation holdovers, but windage holdovers can only be used on the horizontal stadia or windage adjustment would need to be dialed instead.

Ranging and Elevation holdovers with the LR1, LR2, and MR2 Reticle

The reticle can be used to range targets at any magnification. To use any of the following formulas, the size of the target must be know.

LR2, MR2 Mil Ranging Formulas:

$$\frac{\text{Target Size (yards)} \times 1000}{\text{Mils Read}} = \text{Range (yards)}$$

$$\frac{\text{Target Size (inches)} \times 27.8}{\text{Mils Read}} = \text{Range (yards)}$$

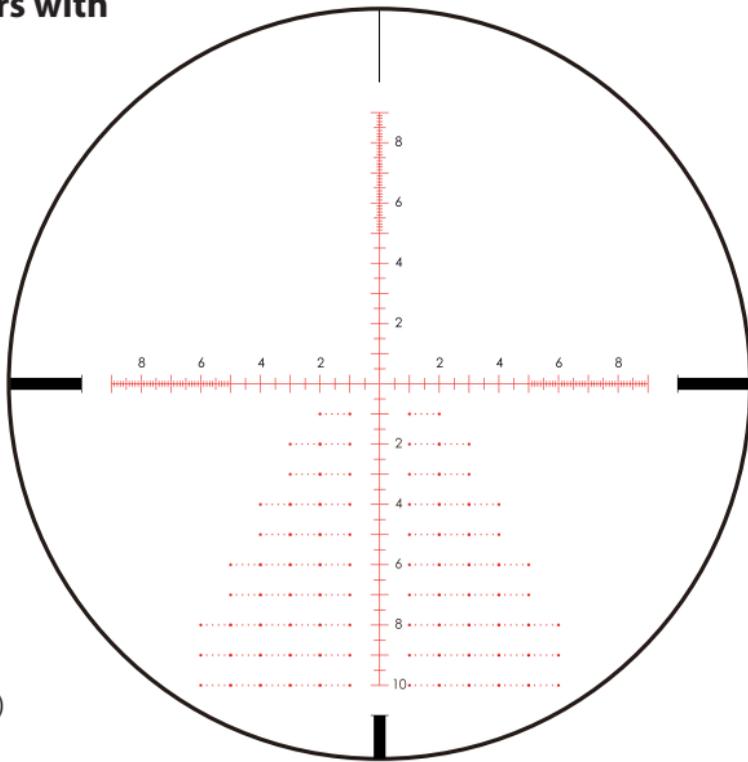
$$\frac{\text{Target Size (meters)} \times 1000}{\text{Mils Read}} = \text{Range (meters)}$$

$$\frac{\text{Target Size (cm)} \times 10}{\text{Mils Read}} = \text{Range (meters)}$$

LR1 MOA Ranging Formulas:

$$\frac{\text{Height of Target (inches)} \times 95.5}{\text{MOA Read}} = \text{Range (yards)}$$

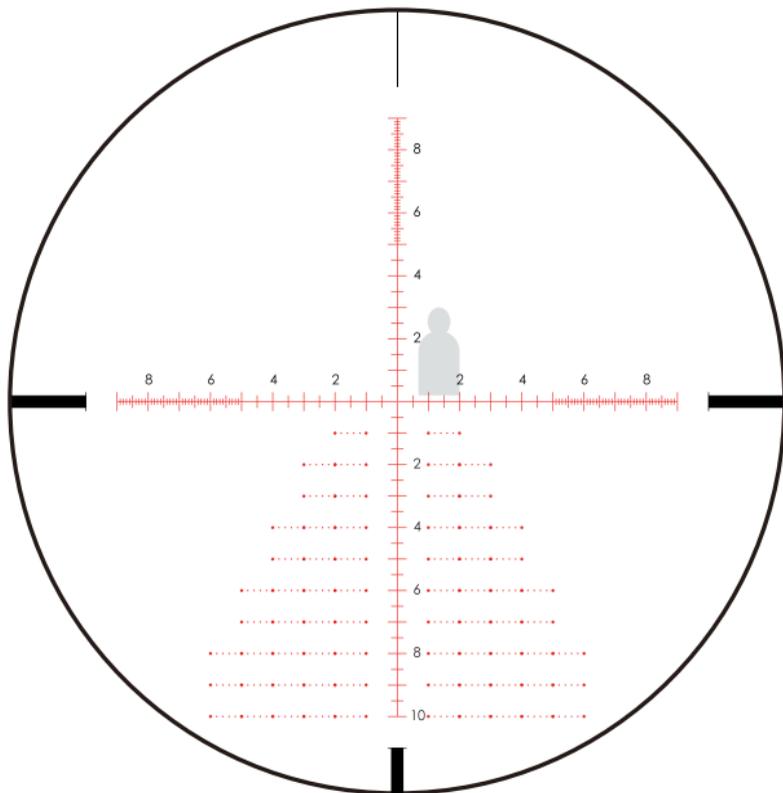
$$\frac{\text{Height of Target (cm)} \times 34.38}{\text{MOA Read}} = \text{Range (meters)}$$



Either the vertical or horizontal scale can be used to range for your target. Try to read mils as accurately as possible. Reading MILs in 1/10 accuracy or MOA in .25 MOA accuracy will provide a more accurate range to the target. Therefore, using the end of either the horizontal or vertical scale will provide more accurate measurements.

For example, in the image (at right) a silhouette target is 1.25 yards tall and reads 3 mils tall.

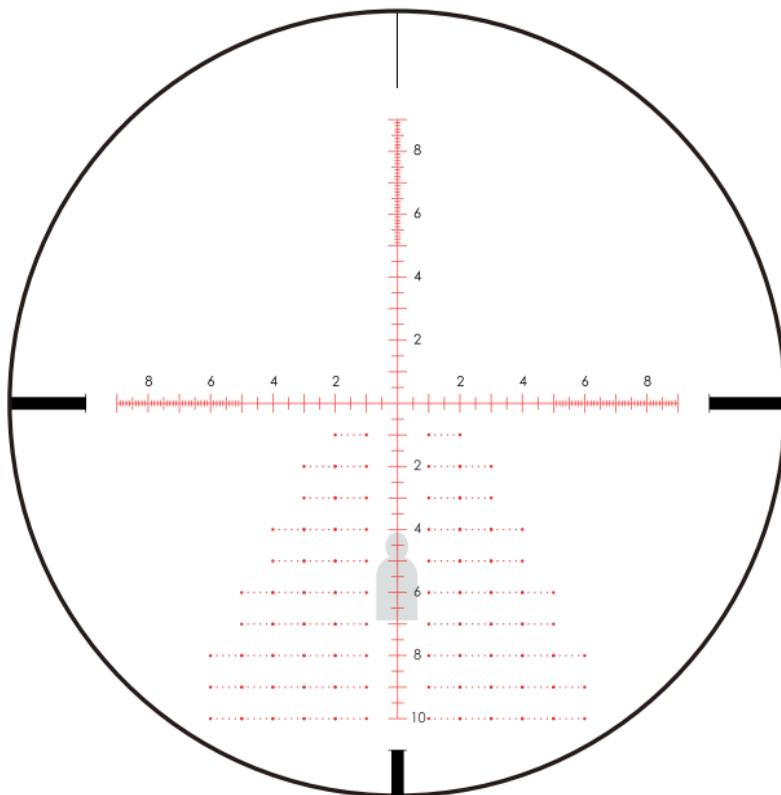
$$1.25 \times 1000 / 3 \text{mils} = 417 \text{ yards}$$



Elevation Holdovers

Once the distance is measured, the vertical scale can be used for holdovers to compensate for bullet drop. The shooter must learn their caliber's specific bullet drop number in accordance to the reticle's dimensions. LR1 reticle should use a dope chart in MOA. LR2 and MR2 reticle should use a dope chart in Millradian. Once the shooter knows the bullet drop the correct hashmark can be used for holdover.

In this example, a 600 yard holdover (5.5 mrad) is used. No wind is present.



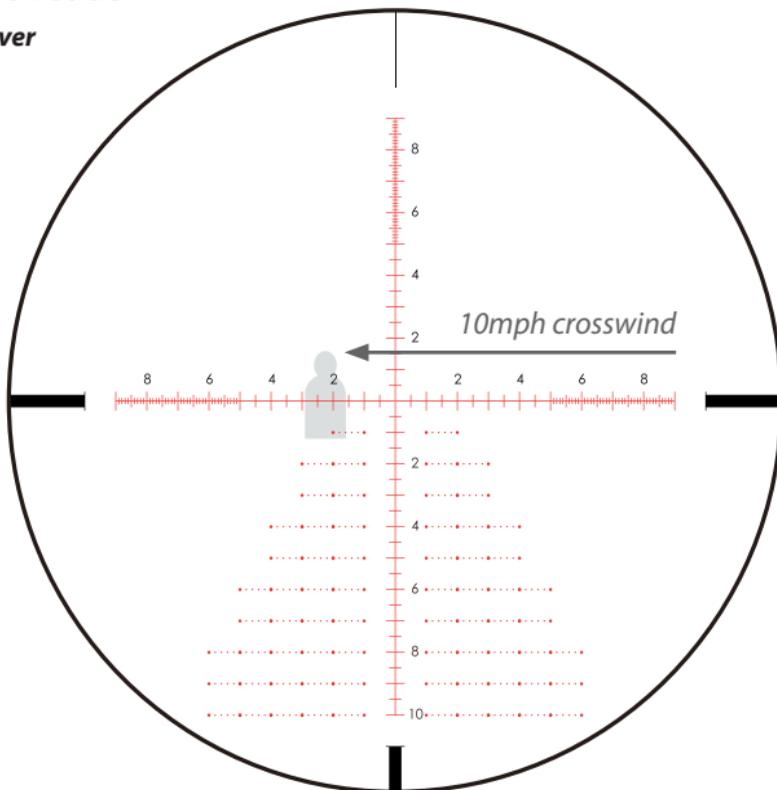
Windage Holdovers and Target Leads

To master windage holdovers and target leads, it is recommended to study your weapon's ballistic performance under varying wind and environmental conditions. It is recommended to learn your caliber's specific windage and moving target holdovers in accordance to the reticle's dimensions. LR1 reticle use a chart in MOA. LR2 and MR2 reticle use a chart in Milliradian. Wind holdovers are done by holding the reticle directly into the wind, however holdover amount can vary with the angle of direction of the crosswind. Estimating a target lead requires knowing speed, target and wind speed, target distance, and bullet flight time. It is recommended to keep handy a ballistics calculator or dope chart (specifically marking time of flight) for holdovers and target leads. Overall, windage holdovers and leads for moving targets take experience in reading wind and target speeds to achieve this level of superior marksmanship.

There are two methods for using a windage holdover. First, prior to setting the reticle for a windage holdover the distance to target must be known. Once known, the bullet drop can be compensated by adjusting the elevation dial so that the horizontal crosshair is used. Next, the correct amount of holdover should be determined for the present wind speed. Reference your ballistics chart by checking the wind drift for the same range. Finally, remember to hold the reticle into the wind and use the windage holdover mark as your aiming point.

Windage Holdovers and Target Leads

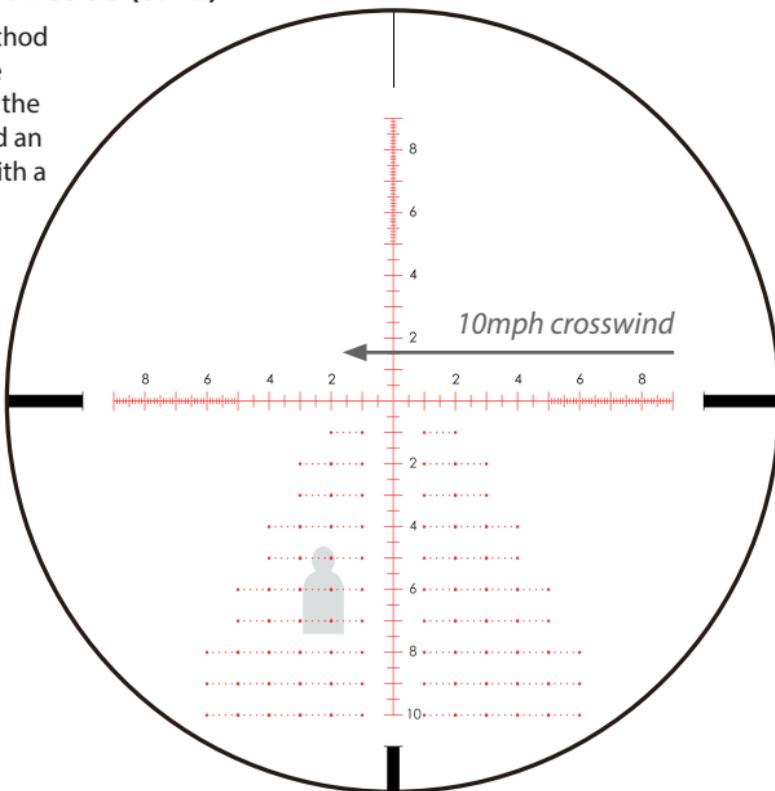
In this example, a 700 yard windage holdover (2.3 mrad) is used for a 10 mph crosswind. Elevation dial has already been adjusted 5.8 mrad for 700 yards target distance.



Windage Holdovers and Target Leads (cont.)

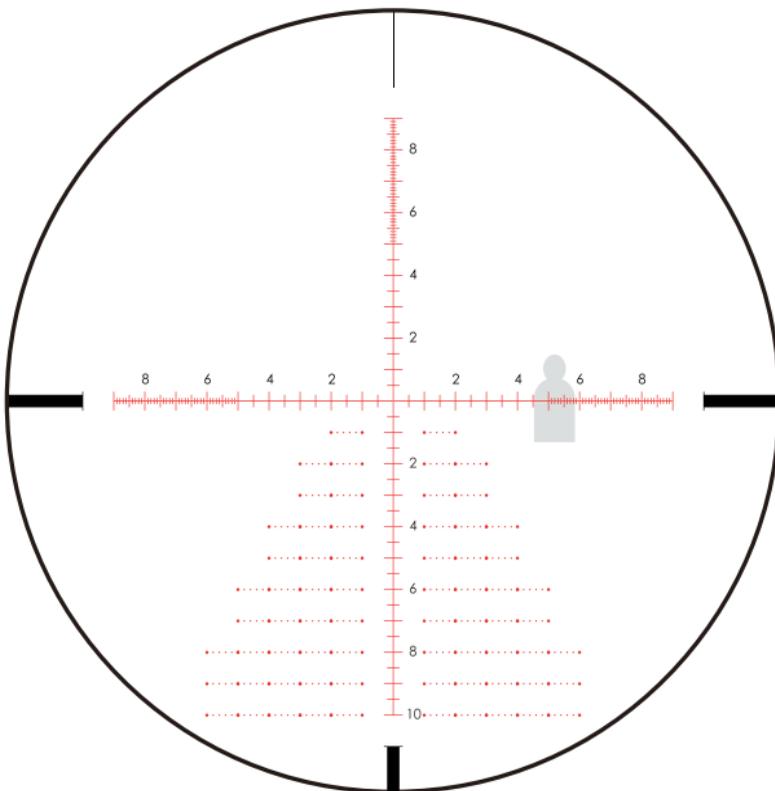
For LR1 and LR2 reticle only, the second method for windage holdover is to use the reference dots and the drop lines instead of adjusting the elevation dial for bullet drop. In this method an elevation holdover is used in conjunction with a windage holdover.

In this example, a 700 yard windage holdover (2.3 mrad) is used for a 10 mph crosswind. Also an elevation holdover of 5.8 mrad is used.



Determining a target lead requires knowing target speed, target distance, wind speed, and bullet flight time to target's distance. Also, correcting weapon cant is a critical step to ensure accuracy for target leads. Again, it is recommended to utilize a ballistic calculator to increase your shooting effectiveness. Finally, mastering this level of marksmanship takes experience. It is also recommended to further your knowledge and study ballistics manuals and shooting guides.

In this example, a target lead of 5.2 mrad is used on a target moving 8 mph at 600 yards. No crosswinds are present. For simplicity, the elevation dial was adjusted 4.4 mrad to compensate for bullet drop.

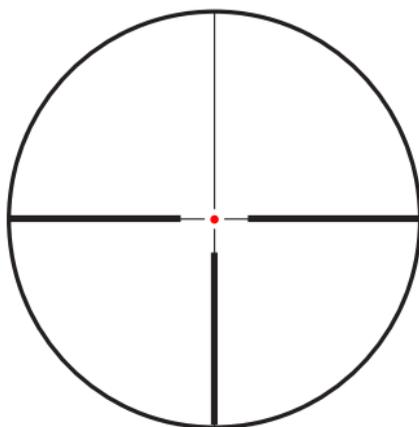


USING THE HUNTER DOT RETICLE

The Sightmark Citadel 1-6x24 HDR and 1-10x24 HDR riflescopes are equipped with the HDR Hunter Dot Reticle. Overall, the hunter dot reticle is designed to reduce the time it takes to acquire the reticle's aiming point. This reticle can be used for hunting various game, large or small. The heavy duplex posts also aids in leading the eye toward the aiming dot.

In the 1-6x24 HDR, the design provides a 1.17 MOA central aiming dot at 6x, critical for precise shot placement. At 1x, the same dot is 7 MOA.

For the 1-10x24 HDR, the aiming dot is 8 MOA at 1x magnification. At 10x, the aiming dot is .8 MOA.



HDR - Hunter Dot Reticle

TROUBLESHOOTING

Proper authorization is required before shipping any product back to Sightmark. Failure to obtain authorization could result in your product being returned to the wrong address, lost, or damaged. Sightmark is not liable for products returned without authorization.

If the riflescope does not hold zero:

1. Verify the sight is mounted securely to the rifle. If the riflescope can be shifted in any direction, retighten the mount according to the mounting instructions but do not over tighten. The sight will need to be re-zeroed afterwards.
2. Check that all screws on the mount are securely tightened.
3. When sighting in be sure to use factory-loaded ammunition of the same bullet type, weight, and preferably lot number.

The reticle does not illuminate:

1. Check that the battery is in working order and that the polarity of the battery is correct.
2. Check that there is no residue, film, or corrosion on the battery contacts that may be preventing the reticle from illuminating.

The reticle is blurry and not in focus:

1. Rotate the eyepiece to adjust the diopter adjustment until the reticle becomes clear and sharp.

The reticle has a halo or is fuzzy:

1. The halo or fuzzy appearance is caused by greater illumination than is required for the current environment the riflescope is being used in, decrease the brightness level of the reticle until clear.

The reticle illumination turns off while firing:

1. Tighten the battery cap with a coin or flathead screw driver so the cap is fully seated.

MAINTENANCE

Proper maintenance of the Sightmark Citadel riflescope is recommended to ensure longevity. It is recommended that when the sight becomes dirty that it is wiped down with a dry or slightly damp cloth. Blow dirt and debris off all optics and then clean lenses with a lens cleaning cloth. To remove oils or dried water spots, apply a small amount of denature alcohol to a lens cloth or cotton swab. Clean the surface of the lens and let dry. Finally use your breath to clean the lens once more. No further maintenance is required. Do not attempt to disassemble any components of the scope

STORAGE

Make sure that your Sightmark Citadel riflescope is securely attached to your rifle before storing, and be sure that the reticle illumination is turned off. Cover with the included lens covers. Remove the batteries if the unit will be stored for an extended period of time.

WARNING

Before handling the Sightmark Citadel riflescope read and understand the contents of your firearm's manual, and the Sightmark manual. Follow all standard safety precautions and procedures during firearm operation, even when the reflex sight is not in use.

- Avoid hitting or dropping the unit.
- ALWAYS check that the chamber of your weapon is clear before mounting or dismounting the rifle scope.
- The reticle illumination should be tested during periods of non-use to make sure it is still operating properly. Failure to follow standard firearm safety precautions and procedures, as well as the above warnings, is dangerous and may result in serious injury, damage to property, or death.

SIGHTMARK WARRANTY

Please visit www.sightmark.com for warranty details and information.



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www.sightmark.com