SIGHT MARK®

COMPETITION
LATITUDE
SERIES

6.25-25x56 PRS	6.25-25x56 F-CLASS	8-32x60 F-CLASS	10-40x60 BENCHREST	10-40x60 F-CLASS
SM13042PRS	SM13042FTR	SM13043FTR	SM13044BR	SM13044FTR

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.

SIGHTMARK®

MAKE YOUR MARK

Latitude Series Riflescope

Designed for long-range competition shooting and Precision Rifle Series matches, the Sightmark Latitude Competition Series Riflescopes takes skilled shooters the full distance with extreme accuracy. We listened to everything competition shooters wanted out of an optic and built the Latitude with oversized turrets for quick and easy adjustments, a zero stop elevation dial and a locking, fast focus eyepiece. The Latitude's 34mm single-piece tube is ideal for long-distance shooting and is able to withstand up to .50 BMG caliber recoil. IP67 waterproof and fogproof, the Latitude offers protection from the elements with fully multi-coated optics. The Latitude comes with sunshade, CR2032 battery and manual.

FEATURES:

- Oversized adjustment turrets
- Zero stop elevation dial
- 34mm single piece tube
- Locking, fast focus eyepiece
- Red or Green Illuminated reticle
- Fully multi-coated optics
- Scratch resistant lenses
- 4:1 Zoom Ratio
- Waterproof, fogproof, shockproof
- Aircraft grade aluminum
- Hard anodized finish

INCLUDED:

- Sunshade
- CR2032 Battery
- Manual

TECHNICAL SPECIFICATIONS	SM13042FTR	SM13042PRS	SM13043FTR
Reticle type	F-Class	PRS	F-Class
Reticle color	red / green	red / green	red / green
Illuminated reticle (yes/no	yes	yes	yes
Reticle brightness settings	0-5	0-5	0-5
Magnification (x)	6.25-25	6.25-25	8-32
Objective lens diameter (mm)	56	56	60
Eye relief (mm/in)	120 - 107 / 4.7 - 4.2	120 - 107 / 4.7 - 4.2	120 - 107 / 4.7 - 4.2
Field of view (m @100m)	6.6 - 1.46	6.6 - 1.46	5.4-1.3
Field of view (ft @100yd)	16.1 - 4	16.1 - 4	16.1 - 4
Diopter adjustment (+/-)	+ 2 to -2	+ 2 to -2	+1.5 to -2
Tube diameter (mm/in)	34	34	34
Parallax setting (yds)	20 - ∞	20 - ∞	20 - ∞
Windage adjustment range	70 MOA	20 MRAD	70 MOA
Elevation adjustment range	110 MOA	31 MRAD	110 MOA
Adjustment value (one click =)	¼ MOA	.1 MRAD	1/4 MOA
Maximum Caliber	50BMG	50BMG	50BMG
Battery type	CR2032	CR2032	CR2032
Battery life (hours)	30 - 2,000	30 - 2,000	30 - 2,000
Focal plane	Second	First	Second
IP Standard (water rating	IP67 - Submergible to 1m	IP67 - Submergible to 1m	IP67 - Submergible to 1m
Lens coatings	Fully Multicoated	Fully Multicoated	Fully Multicoated
Operating temperature (°F)	-20 to 160	-20 to 160	-20 to 160
Length (mm/in)	357 / 14	357 / 14	357 / 14.05
Width (mm/in)	92.9 / 3.65	92.9 / 3.65	90 / 3.54
Height (mm/in)	79.9 / 3.14	79.9 / 3.14	75 / 2.95
Weight (oz)	34.5	34.5	36.2

SM13044FTR / BR
F-Class / Benchrest
red / green
yes
0-5
10-40
60
103.8 - 96.5 / 4.1 - 3.8
3.34 - .85
10 - 2.5
+ 2 to -2
34
20 - ∞
70 MOA
110 MOA
1/8 MOA
50BMG
CR2032
30 - 2,000
Second
IP67 - Submergible to 1m
Fully Multicoated
-20 to 160
357 / 14.05
90 / 3.54
75 / 2.95
36.2

DIAGRAM

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

INSTALLING THE BATTERY

The Sightmark Latitude riflescope is 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 (9) on the illumination dial (8) 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 Latitude riflescope uses an etched reticle. The reticle can be used without illumination and will appear black.

To activate the reticle illumination in red or green:

1. Rotate the illumination dial (8) either clockwise or counterclockwise. The dial is marked with "G" for green or "R" for red followed by the brightness setting ranging from 0 (off) to 5. Setting 5 is best for bright, outdoor environments. Setting 1 is best for low light environments.
2. Set the dial so the setting indicating desired color and 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 Latitude 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. The eyepiece lock ring (3) can be screwed forward towards the magnification adjustment ring (4) to lock the position of the eyepiece. This prevents the eyepiece from rotating further into the riflescope.

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 Latitude riflescope has finger adjustable elevation and windage adjustments (5, 6) with audible clicks.

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.

OPERATING THE ZERO STOP

The Sightmark Latitude riflescope elevation adjustment comes with a zero stop ring. This ring allows shooter's to instantly return the elevation dial to the original zero point quickly without concern of passing below the zero range. First the riflescope should be zeroed and the elevation turret reset to zero before setting the zero stop ring.

To adjust the zero stop:

1. Make sure to loosen the three hex screws on the zero stop ring until the ring moves freely.
2. Rotate the ring until it meets flush with the bottom of the elevation turret. Make sure that the elevation turret does not rotate during this procedure.
3. Tighten the three hex screws on the zero stop ring to lock it in position. The zero stop ring is now set.

PARALLAX CORRECTION

The Sightmark Latitude 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 (7) 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 Latitude riflescope requires 34mm 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 t he 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. Hold the elevation turret firmly in place with your fingers in order to prevent rotation. Use a T220 Torx® key to loosen top Torx screw on the turret. Remove the screw entirely, but be careful not to lose it.
2. Once the screw is loosened, 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 torx screws. Do not over tighten. The windage adjustment should be set to "0" as well.

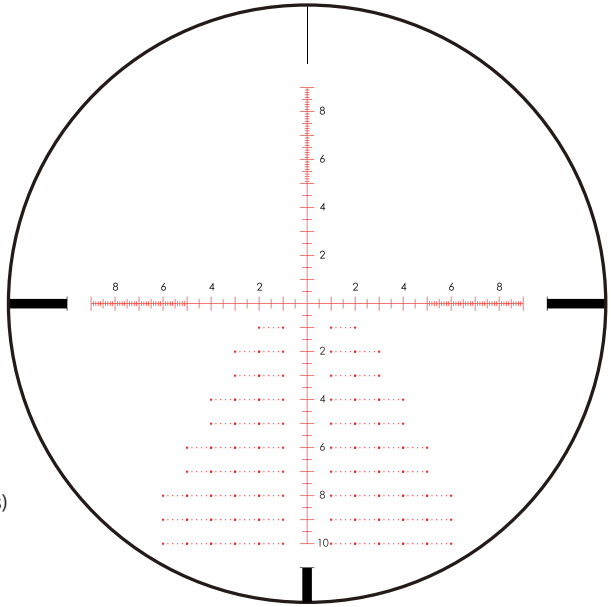
USING THE PRS RETICLE

The Sightmark Latitude PRS riflescope was designed for long range competition shooting. The Sightmark Latitude PRS riflescope is equipped with a first focal plane, milliradian reticle. The reticle can be used to determine ranges and shot holdovers for wind compensation and moving targets. The vertical and horizontal mil scales are scaled in .5mil increments and can be used for range finding and holdovers. The top, left and right end of the vertical and horizontal scale are scaled in .1mil increments for precision range estimation. The reticle's drop lines contain a series of reference dots for quick windage holdovers. Finally, the .03 mil crosshair provides an ultra-fine aiming point for precision shooting even at 25x power.

The Sightmark Latitude PRS riflescope's reticle is based on milliradian (mrad or mil) design. Milliradian is a measurement of angle. A single mil is equal to 3.6" at 100 yards. The adjustments in the Latitude PRS riflescope is .1mrad, meaning that each click will move the point of impact .36" at 100 yards or 1cm at 100 meters. The reticle is a first focal plane reticle. This style of reticle will grow along with the image as magnification is increased. The advantage of a first focal plane reticle is that the dimensions of the reticle will be true at any magnification. Therefore, rangefinding and performing holdovers can be done at any point in the magnification range.

Ranging with PRS Reticle

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



Mil Ranging Formulas:

Target Size (yards) x 1000 = Range (yards)
Mils Read

Target Size (inches) x 27.8 = Range (yards)
Mils Read

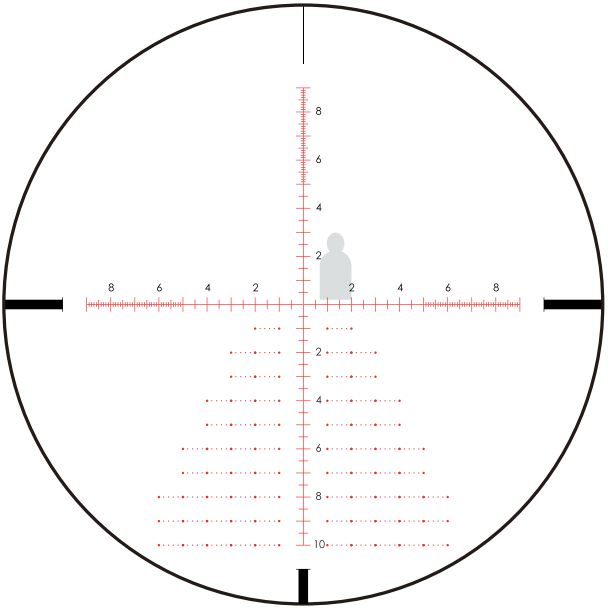
Target Size (meters) x 1000 = Range (meters)
Mils Read

Target Size (cm) x 10 = Range (meters)
Mils Read

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

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

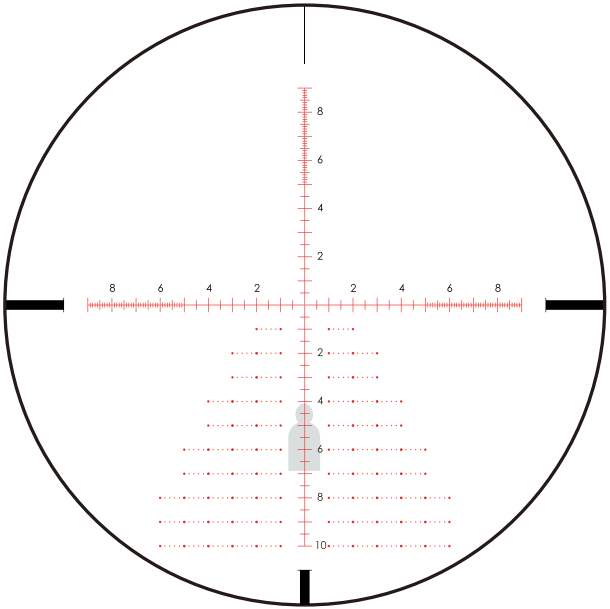
1.25 x 1000 / 3mils = 417 yards



Elevation Holdovers

Once the distance is measured, the vertical mil scale can be used for holdovers to compensate for bullet drop. The shooter must learn their caliber's specific bullet drop numbers in mils rather than MOA. The vertical mil scale is marked in .5 mil increments. Once the shooter knows the bullet drop the correct hash mark can be used for holdover.

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



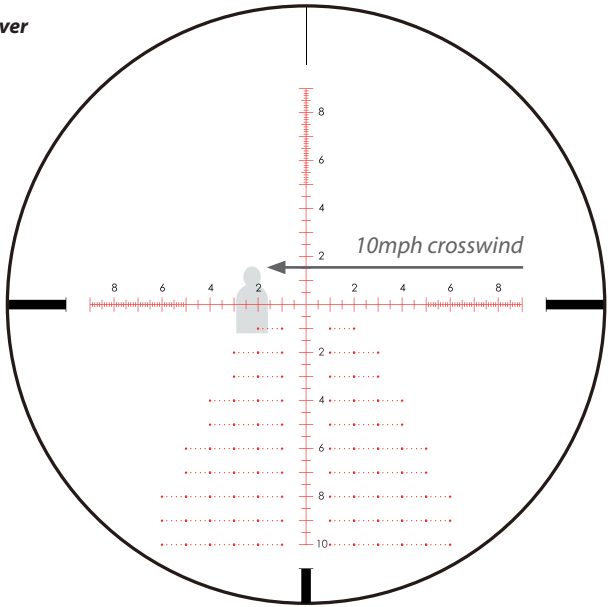
Windage Holdovers and Target Leads

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 also recommended to learn your caliber's specific windage holdovers and moving target holdovers in mils rather than MOA. 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 in mils 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

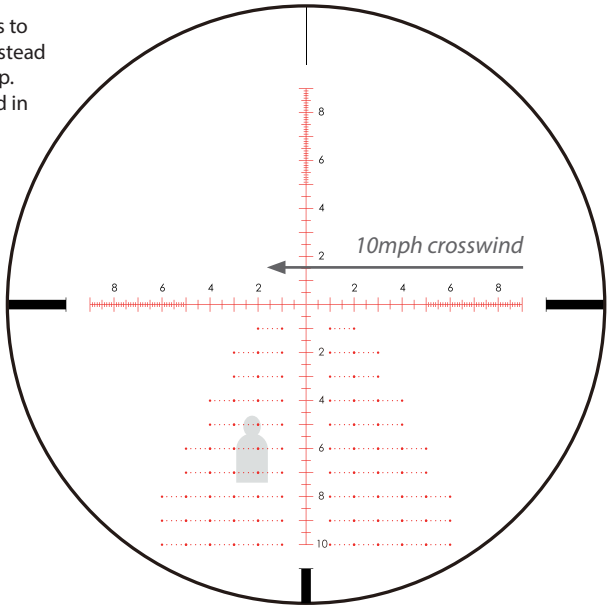
In this example, a 700 yard windage holdover (2.3 mrad) is used for a 10 mph crosswind. Elevation dial has already been adjusted 5.8 mrad for 700 yards target distance.



Windage Holdovers and Target Leads (cont.)

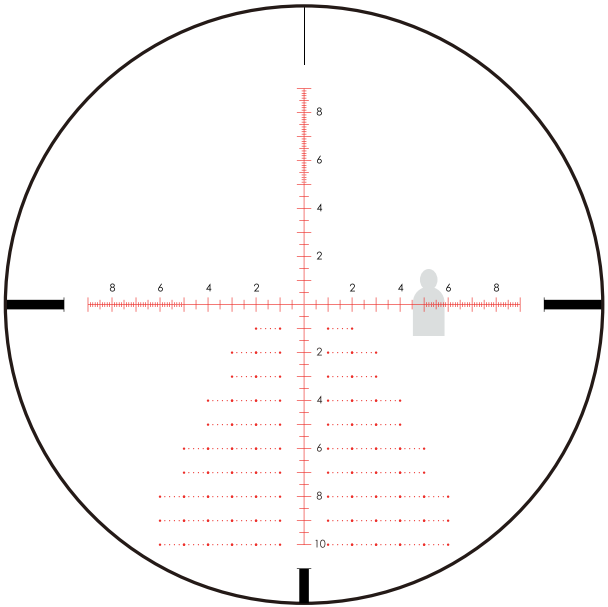
The second method for windage holdover is to use the reference dots and the drop lines instead of adjusting the elevation dial for bullet drop. In this method an elevation holdover is used in conjunction with a windage holdover.

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.



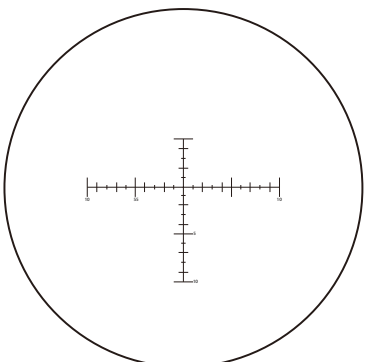
Determining a target lead requires knowing target speed, target distance, wind speed, and bullet flight time to target's distance. Also, correcting weapon cant is a critical step to ensure accuracy for target leads. Again, it is recommended to utilize a ballistic calculator to increase your shooting 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.



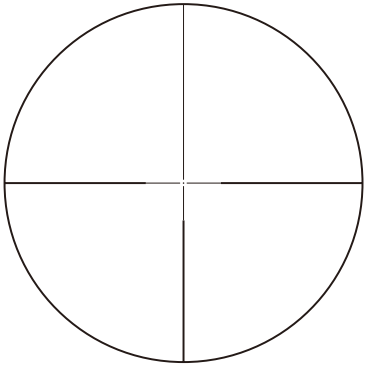
USING THE BENCHREST RETICLE

Sightmark Latitude 10-40x60 Benchrest Riflescope was designed for benchrest competition shooting (22LR or long range). The reticle is based on minute of angle (MOA) design. Minute of angle is a measurement of angle. A single MOA is equal to 1.047" at 100 yards or simply 1". The adjustments in the Latitude 10-40x60 PRS riflescope is 1/8 MOA, meaning that each click will move the point of impact .125" at 100 yards. The reticle is a second focal plane reticle. This style of reticle will always remain a constant size as magnification is increased. The advantage of a second focal plane reticle is that the reticle size will remain the same, ideal size. At 40x, the reticle has a fine .01 MOA thickness. Making it easy to aim precisely and not cover up the target. At 50 yards the reticle crosshair would cover .02" of the target. At 1,000 yards the reticle would cover .1" of the target. The elevation and windage subtensions have 1 MOA increments out to 10 MOA. Elevation can be used for holdovers for heavy grain large calibers.



USING THE F-CLASS RETICLE

Sightmark Latitude F-Class Riflescope was designed for F-Class competition shooting. The reticle is based on minute of angle (MOA) design. Minute of angle is a measurement of angle. A single MOA is equal to 1.047" at 100 yards or simply 1". The adjustments in the Latitude 10-40x60 F-Class riflescope is 1/8 MOA, while the Latitude 6.25-25x56 F-Class Riflescope has ¼ MOA. This means that each click of 1/8 MOA adjustments will move the point of impact .125" at 100 yards, and ¼ MOA adjustments will move the point of impact .25" at 100 yards. The reticle is a second focal plane reticle. This style of reticle will always remain a constant size as magnification is increased. The advantage of a second focal plane reticle is that the reticle size will remain the same, ideal size. At the highest magnification, the reticle has a fine .06 MOA aiming dot. Making it easy to aim precisely and not cover up the target. At 1,000 yards the reticle would cover .6" of the target.



MAINTENANCE

Proper maintenance of the Sightmark Latitude 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 Latitude 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 Latitude 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.

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.

SIGHTMARK WARRANTY

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

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SIGHT MARK®

www.sightmark.com