ATHLON
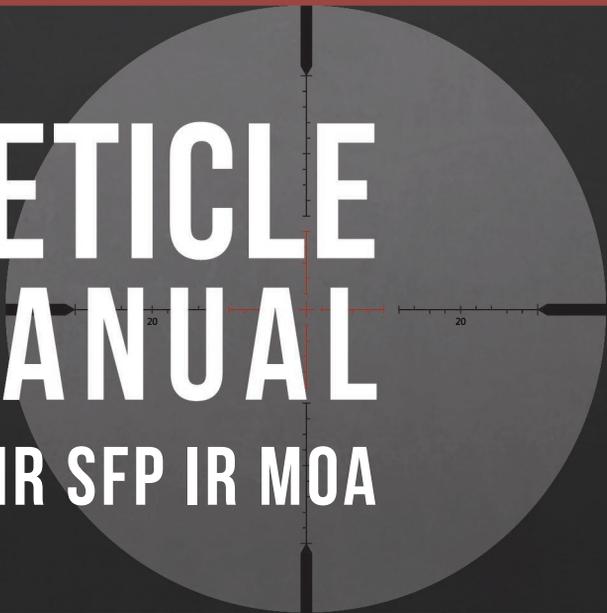## OPTICS

# RETICLE MANUAL

AHMR SFP IR MOA

The ATHLON® AHMR SFP IR MOA Reticle

AHMR SFP IR MOA reticle has a large illuminated center and 2moa increment hash marks, which help you quickly lock in your target and set hold-over positions . The illuminated 20-moa-span center with a 2 moa center cross and 2 moa increment hash marks extended to 10 moa at each direction on both vertical and horizontal lines helps the shooter quickly locate the target and lock it on the center within a blink of an eye. The illuminated portion of the reticle provides excellent low light visibility and accurate elevation holdovers all the way up to 30 moa with 2 moa increment.

Application: *Precision Mid Range Shooting for both Tactical and Hunting*
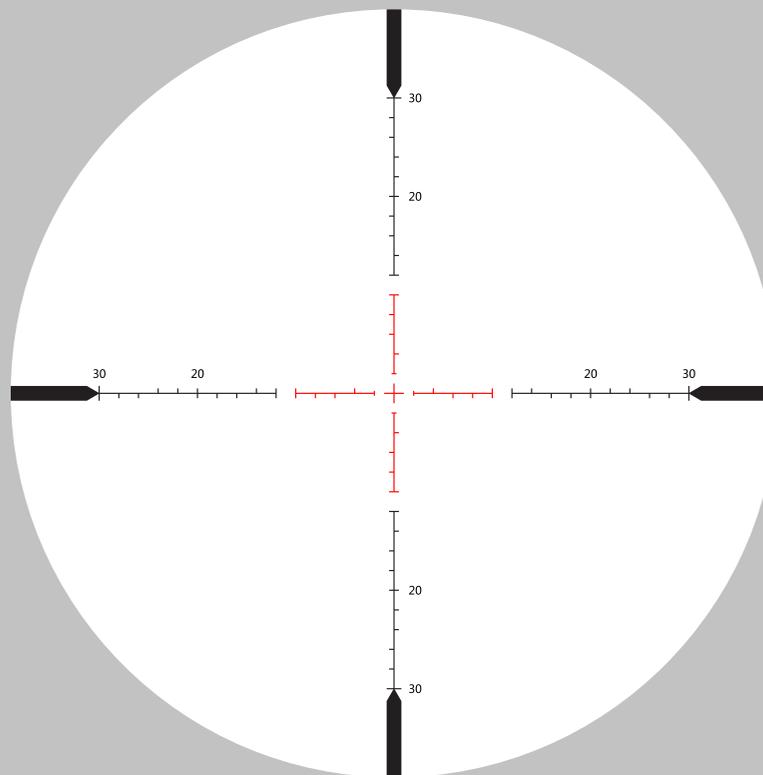
Note: *The reticle image shown above will appear differently among different models due to different magnification and location of the reticle.*
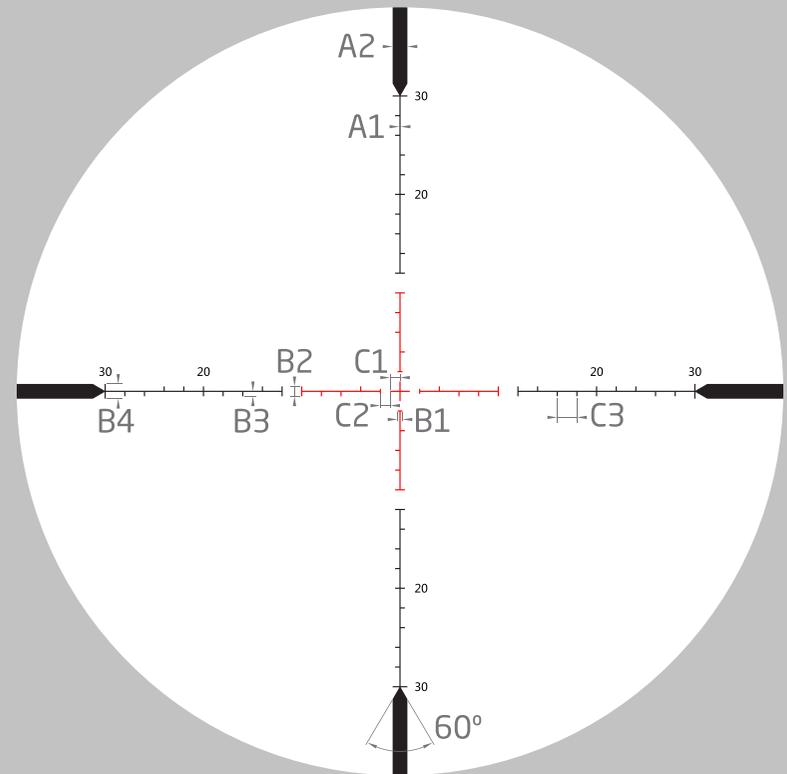
Reticle Subtensions

The AHMR SFP IR MOA reticle is based on the minute of angle, a unit of angular measurement, usually shortened to moa. A "moa" is defined as "one minute of an angle". As a full circle has 360 degrees, and each degree is composed of 60 minutes (60'). thus there are 360 (degrees) x 60 (minutes) = 21,600 minutes in a circle. Since there are 360 degree in a circle, we can get 360 degree/21600 minutes=0.016667°/minute. If the target is 100 yards (3600 inches) away, we can use a formula, 3600*TAN(RADIANS(.016667)), to get 1.047 inches which means 1 moa equals to 1.047 inches at 100 yards. Many people just round up the 1.047 inches to 1 inch @100 yards. If you are using metric system, formula 100000mm*TAN(RADIANS(.01667)) gets you that 1 moa equals to 29.1mm @100 meters.

The AHMR SFP IR MOA reticle is located at the second plane which stays in between erector tube and ocular lens. The size or the appearance of a second focal plane reticle does not change when you try to zoom in or zoom out, however the relative ratio between reticle and your target changes all the time because your target appears bigger or smaller when the magnification changes.

The subtensions of a second focal plain reticle and ranging capability are only accurate at certain magnification and due to this nature, the subtensions of the reticle are only valid at 15x for both 2.5-15 and 4.5-27 scopes.

Example

| AHMR SFP IR MOA	A1	A2	B1	B2	B3	B4	C1	C2	C3
SUBTENSIONS IN MOA	0.12	1.5	0.5	1	0.5	1.5	1	1	2

Distance Ranging

$$\frac{\text{Height of Target (Inches) x 100}}{\text{MOA Reading on Reticle}} = \text{Distance to Target (Yards)}$$

$$\frac{\text{Height of Target (CM) x 34.4}}{\text{MOA Reading on Reticle}} = \text{Distance to Target (Meters)}$$

As the height of target and moa reading on the reticle are two key variables in this equation, you have to get an accurate value for those two as mush as possible. First all you want to put your rifle on a steady rest so you can get an accurate reading of the target height on the reticle. If needed using the smallest measurement on the reticle to get the most accurate readings. Second use your best knowledge on the height of the target, such as 72 inch high fence or 45 inch shoulder high of white tail deer, to give a value of the target height. Once you got the reading on reticle and your estimate of the target height, you can just simply use above equations to calculate the distance to your target.
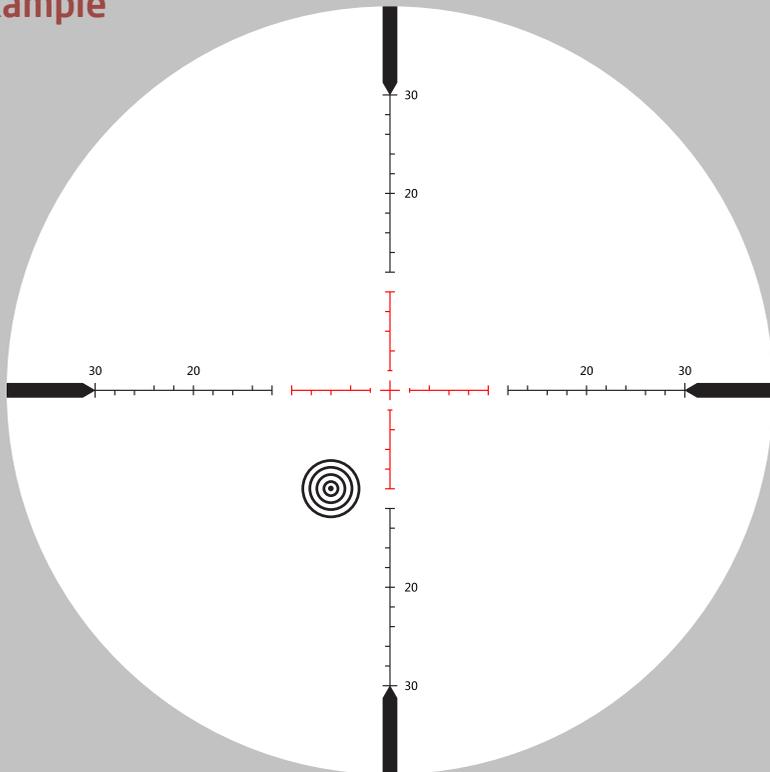
Example
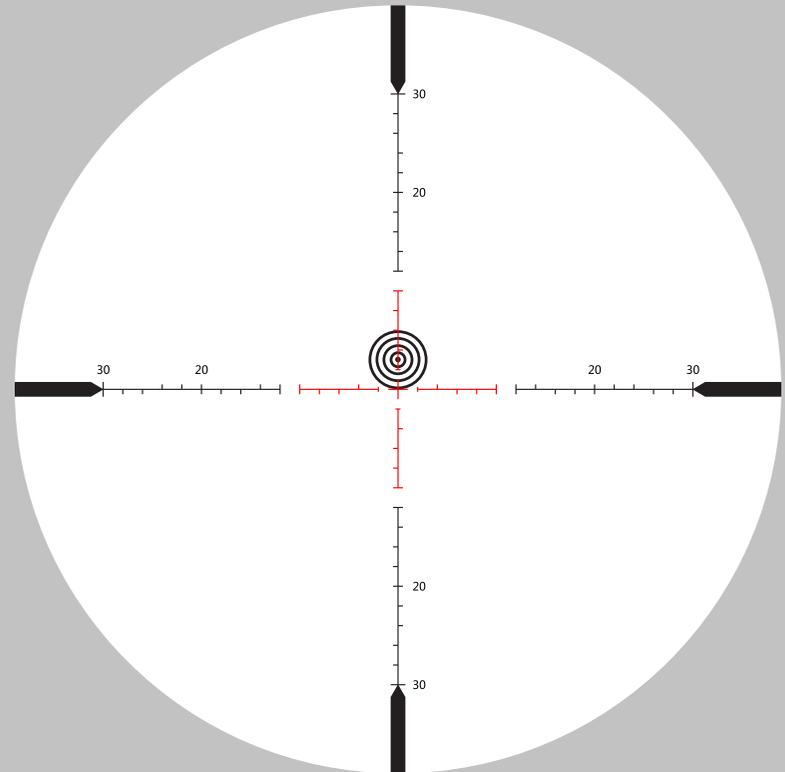
Reading a 3-foot target (36 inches) at 6 moas gives 600 yards

$$\frac{36 \text{ inches x } 100}{6 \text{ moas}} = 600 \text{ yards}$$

Use visual cross point for wind correction and bullet drop

As an alternative, you can use a visual cross point formed by horizontal and vertical hash mark to holdover for both wind correction and bullet drop.

Example

Use 10 moa for 60 inch bullet drop for a target at 600 yards, 6 moa wind correction for 10 mph wind from right to left.

Hold lead correction for a moving target

Distance to your target, moving speed of your target, bullet flying time, wind direction are the key factors that determine how much holdover you need to hold for a moving target. As a rule of thumb, you always hold the lead for the net distance of your target moved (add or subtract holdover for wind correction) during the time span your bullet traveled.

Example
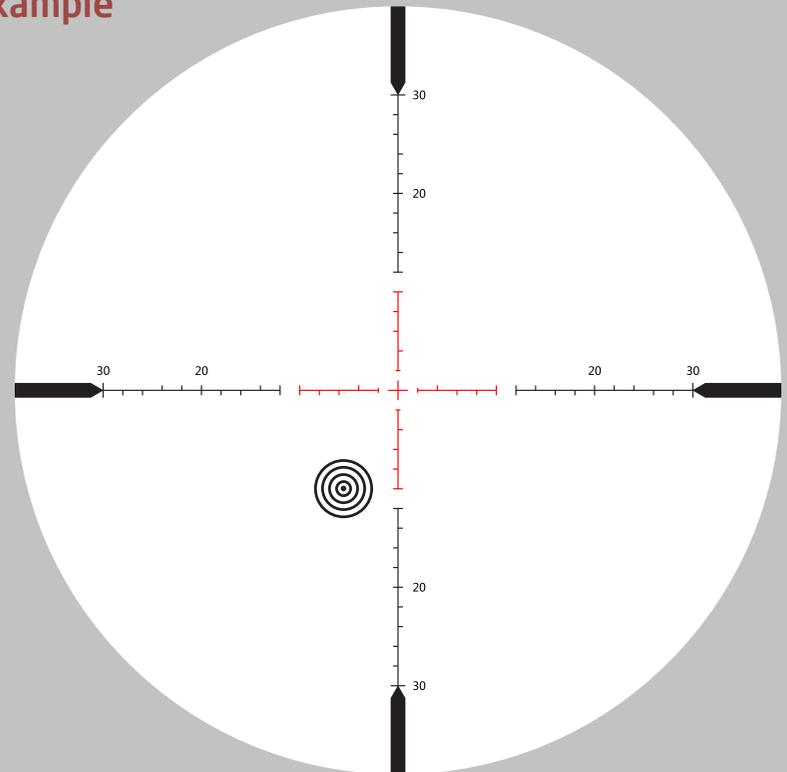
5.9 moa lead holdover for a moving target traveling at 2 mph from left to right at 600 yards. Bullet flight time is 1 second during which the target traveled 2.94 feet. No wind.

THE ATHLON GOLD MEDEL LIFETIME WARRANTY*

Your Athlon product is not only warranted to be free of defects in materials and workmanship for the lifetime of the product. Athlon will also repair or replace, at no charge to you, your product if you should damage it through normal use. No receipt is needed, no registration is required. This is a commitment that Athlon Optics will be the best product you can buy for your money.

This warranty does not cover damages caused by deliberate damage, misuse, theft or maintenance provided by someone other than the Athlon Authorized Service Department.

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