



RETICLE MANUAL

READ IT BEFORE USE!!!

READ AND UNDERSTAND THE CONTENTS OF YOUR RETICLE MANUAL.

▼ Scan the QR code to learn more about VectorOptics.



VECTOROPTICS



USER MANUAL



FACEBOOK



INSTAGRAM

CONTENTS

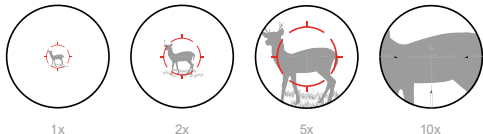
FIRST FOCAL PLANE RETICLES	4
MILS/MARD EXPLAINED	5
VET-RAR FFP MIL RETICLE	6
DIAGRAM	9
RANGING	11

FIRST FOCAL PLANE RETICLES

A first focal plane (FFP) reticle is a type of reticle that is commonly used in long-range shooting.

These reticles are designed to change their size proportionally to the magnification of the scope. This means that the reticle remains accurate at any magnification, making it ideal for long-range shooting. In an FFP reticle, the reticle markings appear to grow and shrink as the magnification is adjusted, which allows for accurate holdovers and range estimations at any power setting.

Compared to the second focal plane (SFP) reticle, the FFP reticle offers greater versatility and accuracy. FFP reticles are particularly useful in tactical shooting scenarios where quick and precise adjustments need to be made.

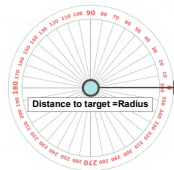


MILS / MRAD EXPLAINED

MILs, or milliradians, are a unit of measurement dividing radians in a circle. A radian is equal to 57.3 degrees, with $6.2832 (\pi \times 2)$ radians in a circle. There are 1000 milliradians in 1 radian, and therefore 6,283 milliradians (or mils) in a circle.

1 MIL equals 1/1000 of any shooting distance. So 1 MIL is 1 meter at 1000 meters, and 1 yard(36") at 1000 yards. Then **1 MIL is approximately 10cm at 100m**, 20cm at 200m and so on. Likewise, **1MIL is approximately 3.6 inches at 100 yards**, 7.2 inches at 200 yards and so on.

A mil is so large that it's usually broken into tenths in order to make precise adjustments on your scope turret.



THE Vector Optics® VEC-MBR FFP MIL RETICLE

The **VET-CTR** reticle consists of two parts. **The upper part of the reticle is designed for USPSA targets(18"x30"/45cmx75cm).**

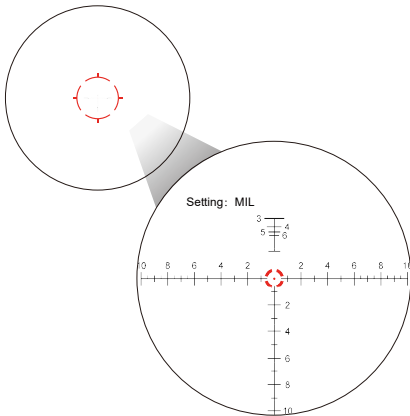
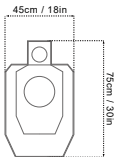
By horizontally aligning the width of the target or vertically aligning the height of the target, an approximate distance can be obtained. Check out the picture below for reference.

RAR(RAPID ACQUISITION RING) RETICLE

RAR = Rapid Acquisition Ring, it is the outer circle pattern around the inner MIL reticle. It has a diameter of 65MIL, with 4 space area on the circle, each is 10MIL long. The RAR reticle allows the shooter to quickly acquire a target by framing it within the circle. It also helps to center the reticle on the target, especially when the shooter is quickly moving from one target to the next. The RAR reticle assists in fast and accurate sight alignment, which is critical in shooting sports. **Starting from 6x magnification, The ring will disappear as it zooms in, there will be no obstruction of your eyesight.**

INNER MIL RETICLE

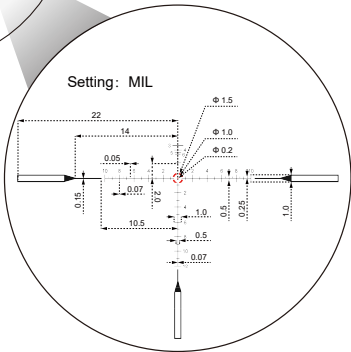
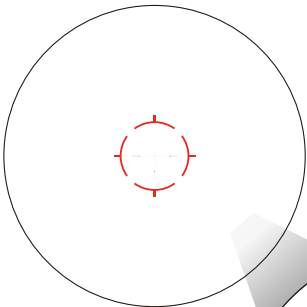
The inner MIL reticle consists of two parts. **The upper part of the reticle is designed for USPSA targets(18"x30"/45cmx75cm).** By horizontally aligning the width of the target or vertically aligning the height of the target, an approximate distance can be obtained. Check out the picture below for reference.



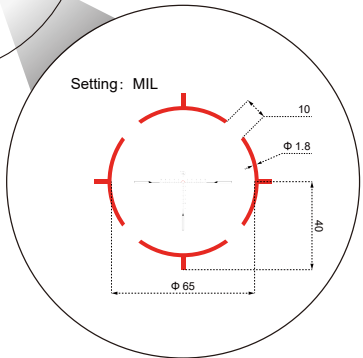
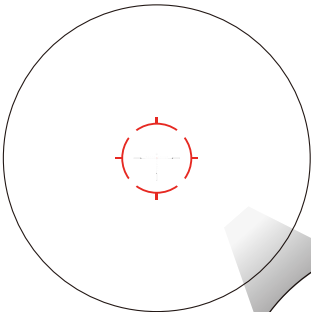
The bottom part of the reticle is a MIL hash reticle, providing further precision in your shooting. It features an illuminated center circle dot with Mil hash markings on the horizontal & vertical crosshairs. MIL hash reticle in FFP is commonly used in long-range shooting. It is particularly useful when shooting at targets that are at a distance of more than 100 yards. The reticle allows the shooter to estimate the range to the target and make adjustments to their aim accordingly. This makes it an ideal choice for hunters and military snipers.

The center area of the MIL hash reticle is an illuminated circle dot, which is designed for precision shooting at mid to high magnifications. The dot has a diameter of 0.2MIL, while the inner circle has a diameter of 1.5MIL. The empty space between the dot and the inner circle has a diameter of 1MIL, providing the user with constant average point-of-impact feedback within reasonable shooting distances.

The center circle dot enables the shooter to have a clear and precise view of their target, especially at high magnifications. The dot acts as a focal point, allowing for quick and accurate target acquisition. The inner circle provides a clear reference point for windage and elevation adjustments, allowing the shooter to make precise corrections.



Setting : MIL

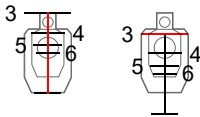


Setting : MIL

RANGING WITH THE FAST RANGING RETICLE

The upper part of the reticle is 45cm wide and 75cm high, designed for USPSA targets, it is used to help shooters estimate the range of their targets quickly. You can achieve fast ranging by horizontally aligning the width of the target or vertically aligning the height of the target.

EXAMPLE



If you vertically align the bottom of the USPSA target, and its highest point reaches mark 3 on the reticle, then the target is 300 meters away from you.

If horizontally align the USPSA target's width, and its shoulder at the widest point reaches mark 3 on the reticle, then the target is 300 meters away from you.

RANGING WITH THE MIL HASH RETICLE

The MIL is an angular measurement -- 1/6400th of a circle -- which equals almost precisely one yard at 1000 yards or one meter at 1000 meters. To use the Mil Hash Reticle for ranging, the shooter first needs to know the height of the target in question. Once the height of the target is determined, the shooter can use the Mil Hash Reticle to measure the target in mils. **You can also use the Mil hash marks on the horizontal line for range estimation, if the width of the target is determined.** This proportional relationship makes possible a simple formula to compute distances:

Height of Target (yards) / mils * 1000 = Distance to Target (yards)

If the height of target is in Inches, then the formula should be:

Height of Target (inches) / mils * 27.78 = Distance to Target (yards)

(1 inch ≈ 0.0277778 yards)

This formula works equally well with meters, but don't mix meters and yards:

Height of Target (meters) / mils * 1000 = Distance to Target (meters)

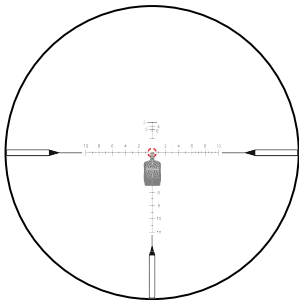
★ Measure the object in yards to find the distance in yards, and use meters to yield distances in meters.

HOW TO MEASURE TARGET HEIGHT

If the height of an adult male is 5.91ft, and measures 5Mils across the reticle, that is:

5.91ft = 70.9 inches

70.9(inches) / 5mil * 27.78 = 394 yards



HOW TO MEASURE TARGET HEIGHT

If the distance of the target is determined, then the shooter can use the Mil Dot Reticle to measure the target height. You can use the following formula:

Distance to Target (yards) / 1000 * Mils = Height of Target (yards)

Distance to Target (yards) / 27.78 * Mils = Height of Target (inches)

(1 inch ≈ 0.0277778 yards)

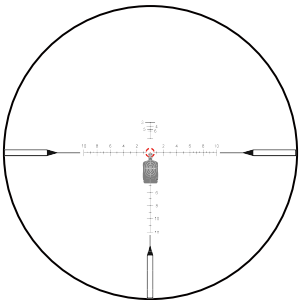
This formula works equally well with meters, but don't mix meters and yards:

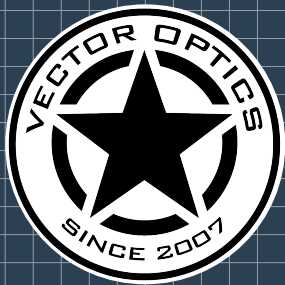
Distance to Target(meters) / 1000 * Mils = Height of Target (meters)

EXAMPLE

If the Distance to Target is 400m, and the target measures 4.5Mils across the reticle, then the target height is:

$$400 \text{ (meters)} / 1000 * 4.5 \text{ MIL} = 1.8 \text{ (meters)}$$





VET-RAR

USER MANUAL

@ vector_optics
www.vectoroptics.com