MEPROLIGHT®
SK GROUP MEMBER

MVO™

1-8x28 FFP LPVO

PROFESSIONAL RIFLESCOPE

USER MANUAL

RUGGED PERFORMANCE

SUPERIOR QUALITY

BRILLIANT RESOLUTION

OVER 92% LIGHT TRANSMITTANCE

DESIGNED FOR PROFESSIONALS

MVO™

PROFESSIONAL RIFLESCOPES

INTELLIGENT DESIGN MEETS PEAK PERFORMANCE

Meprolight® Variable Optics (MVO™) professional riflescopes represent the culmination of intelligent optical design, superior components, and world-class manufacturing. Utilizing the latest in high-tech computer optical simulation, peak performance tests were conducted to obtain superior on-axis and off-axis image resolution, optimal field of view (FOV), consistent eye relief, and optimized exit pupils.

Every lens is individually designed with precision curvature, center-to-edge thickness, perfect centering, and precise inter-element air gaps, combined into an optimized optical system. We use the world's best precision ground glass, coated to deliver over 92% light transmittance guaranteeing optimal image resolution, edge-to-edge clarity, and amazing contrast.

The MVO™ family of precision optics are the result of state-of-the-art mechanical and electrical systems, manufacturing and quality control. Intense product testing ensures peak performance for professional shooters and shooters who want to take their skills to the next level.

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IMPORTANT INFORMATION

You have purchased a sophisticated optical device. Make sure to carefully read and follow all the instructions and guidelines in this manual. Improper use and maintenance may permanently damage the product and void the warranty.

- Register your optic at https://links.meprolight.com/ProductReg.
- Ensure the firearm is unloaded and safe by removing the magazine and all ammunition from the firearm. Verify the chamber is empty before installation and battery replacement.
- Read and follow the instructions in this manual carefully. Improper use or maintenance may permanently damage the product and void the warranty.
- This manual provides description, operating, maintenance instructions, and technical specifications for the MVO™ Riflescope (hereinafter referred to as "MVO™").

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THE MVO™ STANDARD

HIGHER DEFINITION IMAGE QUALITY

- Optimized German SCHOTT Glass
- Multi-coated Lenses for Optimal Scratch Resistance, Minimal Glare and Reflection
- Over 92% Light Transmittance
- Striking Edge-To-Edge Clarity with High Contrast Resolution
- Superior Wide-Angle Field of View
- Smooth and Consistent Magnification Adjustment Ring

READY FOR WHEN AND WHERE IT COUNTS

- IPX7 Waterproof Rated with -40°F to 160°F Operational Range
- .338 LAPUA Magnum Caliber Rated
- Red and Green Reticle Illumination
- 12 Hour Automatic Shutoff
- Protected by Meproguard Limited Lifetime Warranty

TAILORED ERGONOMICS

- Push/Pull Lockable Windage and Elevation Turrets
- Smooth, Predictable, Tactile Precision Adjustment with Audible Click Values
- Machined Turrets, Magnification Ring, and Eyepiece Diopter Optimized for Gloved Use
- Optional Extended Throw Lever Included

MODEL INFORMATION

MODEL:
MVO™ 1-8X28 FFP

PACKAGE CONTENTS:

- Riflescope
- Throw Lever Extension
- Protective Lens Caps
- CR2032 3v Li Battery
- Cleaning Cloth
- User Manual
- 1.5mm & 2mm Hex Key
- Meprolight® Decal

SPECIFICATIONS

Magnification	1X - 8X
Focal Plane	First Focal Plane
Length	10.9" / 277 mm
Tube Diameter	34 mm
Objective Diameter	28 mm
Mounting Space Front	2.16" / 55.11 mm
Mounting Space Rear	2.64" / 67.09 mm
Weight (w/Battery)	25.25 oz / 716 g
Eye Relief	3.74" / 95 mm
Exit Pupil	10 mm - 3.5 mm
Linear FOV @ 100 Yds	115.5' - 14.1'
Linear FOV @ 100 m	38.5 m - 4.7 m
Angular FOV	21.8° - 2.7°
Diopter	-3D - +2D
Parallax	Preset @ 100 yds / 91.4 m
Elevation Travel	Up 19 MRAD, Down 13.5 MRAD
Windage Travel	Right 7.5 MRAD, Left 7.5 MRAD
MOA Per Revolution	10 MRAD
Click Value	0.1 MRAD
Reticle	Etched Glass M1 MRAD
Illumination	Red / Green (10 Day/2 NV Settings Each)
Fogproof	Nitrogen Gas Purged
Waterproof	IPX7
Battery Type	CR2032

OVERVIEW

- **A** Diopter Adjustment
- **B** Magnification Ring
- **C** Integrated Throw Lever
- **D** 34mm Main Tube
- **E** Push/Pull Lockable Windage Turret
- **F** Push/Pull Lockable Elevation Turret
- **G** Illumination Color/Intensity Adjustment
- **H** Battery Compartment
- **I** 28mm Objective Lens

J 1.5mm and 2mm Hex Key

K Extended Throw Lever w/ Screw

L CR2032 3v Li Battery

M Flip-Open Lens Caps

N Lens Cloth

BATTERY INSTALLATION

To change the battery (CR2032), turn the cover (1) to the left (counterclockwise). The battery is inserted with the positive (+) pole facing out. Then screw the cover (2) back on. Make sure it is seated properly and check the condition of the sealing ring. Replace the seal if it is damaged. Note: If the riflescope will not be used for an extended period of time, removing the battery is recommended.

WARNING! Review the warning label on pages 12-13 for important information about Reese's Law.

⚠ WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH OF CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.

⚠ WARNING

- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. DO NOT dispose of batteries in household trash or incinerate.
- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- Battery type: CR2032
- Battery voltage: 3V
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.

⚠ BATTERY WARNING

- Ensure the batteries are installed correctly according to polarity (+ and -).
- Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
- Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time accordingly to local regulations.
- Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

OPERATION

MAGNIFICATION ADJUSTMENT

Adjust the magnification by rotating the power ring counterclockwise to zoom in and clockwise to zoom out. (1)

An optional throw lever extension is included and can be installed to aid in making swifter adjustments to the power ring.

To install the throw lever, slide its corresponding slot over the protruding tab on the power ring. Secure the throw lever to the tab using its included screw and 2mm hex tool. Do not over-tighten.

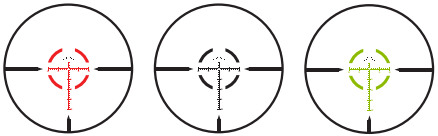
FOCUSING THE RETICLE / DIOPTER ADJUSTMENT

The diopter adjustment ring is located at the ocular (rear) end of the scope. The wide range of the diopter allows the scope to be fine-tuned to the user's unique vision for optimized reticle clarity and sharp image quality.

To make adjustments, point the scope at a light-colored background to clearly view the reticle. While looking through the scope turn the ring clockwise or counterclockwise (2) until the reticle appears clear and sharp. It's important to make adjustments incrementally each time with a fresh view of the reticle and before your eyes automatically adjust to the reticle over time.

WARNING! Never look at the sun or a laser light source through your rifle-scope. This can cause severe injuries to your eyes.

ILLUMINATION ADJUSTMENT



Illumination is turned on by rotating the illumination adjustment knob to any of the 'R' or 'G' settings. The 'G' zone represents illumination in green. The 'R' zone represents illumination in red.

Illumination intensity control is variable. The numerical scale of '1' represents the lowest intensity setting, while '10' represents the maximum intensity setting. The 'OFF' setting is located between 'G1' and 'R1'. Settings '1' and '2' have intensity levels that are suitable for night vision equipment.

The reticle illumination flashes when the battery is low. When this happens, replace the battery.

Automatic Shutoff: Illumination will automatically shut off after 12 hours if left on. To turn illumination back on, simply press the illumination toggle once.

BASIC MOUNTING INSTRUCTIONS

The MVO™ 1-8x28 FFP riflescope requires 34mm rings. These can be individual rings or a one-piece cantilever base.

To optimize the performance of the riflescope and mounting solutions, use a high-quality ring and base combination that properly fits your rifle and riflescope model.

Different firearms will require specific ring heights. For best accuracy, choose the lowest ring height possible to keep the centerline of the MVO™ as close to the barrel as possible. If you are unsure, consult Meprolight® for recommendations.

1. Mount the correct scope rings or ring mount to the firearm's rail whether it is a MIL-STD 1913 Picatinny, Weaver, or Dovetail mounting interface. Follow the recommended procedures provided by the scope rings or mount manufacturer.

2. Remove the top halves of the scope rings and place the scope within its saddle.

3. Reinstall the top halves with just enough torque to hold the scope in place, but still rotate along its axis and move forward and rearward in the saddle.

! Refer to the recommended screw torque specifications and mounting instructions provided by the mounting base/ring manufacturer.

4. With a comfortable cheek weld and shooting posture, look through the scope and move it forward or backward within the saddle to adjust for eye relief. Once you can clearly see through the scope with bright and full sight picture and no peripheral "Black Ring", proper eye relief is achieved. Repositioning the scope rings or mount on the firearm may be required in addition to the above to achieve proper eye relief.

5. Using a bubble level or other scope alignment tool, ensures the scope's reticle alignment is not canted, but leveled with that of the firearm.

6. Secure the scope in place using a cross-torque pattern for the screws with proper correct torque value provided by the manufacturer.

BEST EYE RELIEF: 3.7" (1X), 3.5" (8X)

NOTE: While wearing thick clothing, you may need to adjust your riflescope mounting location to accommodate for correct eye relief.

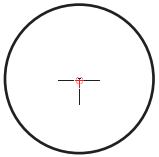
FIRST FOCAL PLANE (FFP)

First Focal Plane (FFP) reticles change in size as the scope's magnification is changed: thinner at low magnification. Closer and thicker at high magnification.

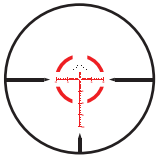
Suitable for precision long-range applications, use a FFP reticle when you want to easily measure your targets and holdover with your reticle across all magnifications.

Your MVO™ 1-8x28 FFP riflescope with a M1 MIL reticle is a first focal plane riflescope.

The M1 MIL reticle changes size as the magnification changes. The reticle appears small at low magnification and scales up in size at high magnification. Illustration 1 shows the reticle at low magnification. Illustration 2 shows the reticle at high magnification.



1x
ILLUSTRATION 1
@ 1x magnification



8x
ILLUSTRATION 2
@ 8x magnification

UNDERSTANDING MRAD

Your MVO™ with the M1 MIL reticle uses the MRAD (Milliradian) unit of measurement, which is the prevailing system internationally and for the military and law enforcement professionals and is quickly becoming the choice for competitive shooters and long-range hunters.

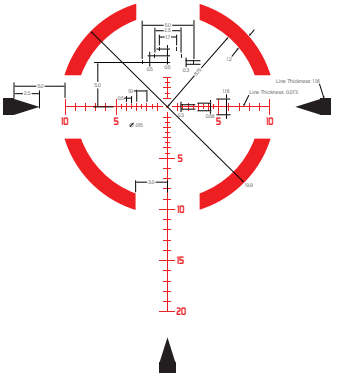
MRAD converts to approximately 3.6 inches at 100 yards (10 cm at 100 m). MRAD reticles typically offer less clicks, making it quicker and easier to dial for longer ranges.

M1 MIL RETICLE

The M1 MIL Reticle is an MRAD Speed Ring reticle made for CQB to mid-range shooting.

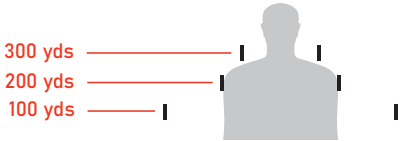
The M1 MIL Reticle provides a separated cross-hair for easy aiming. An illuminated CQB circle at lower magnifications allows users to quickly place shots by placing close range targets within the circle.

At 1x magnification, the circle can be used similarly to a red dot sight for fast target acquisition. At distance, convenient shoulder-to-shoulder references quickly estimate range without cluttering the view of the target. Miliradian (MRAD) holdover stadia line aid users in distance compensation.



RANGING SYSTEMS

A quick-ranging system is built into the M1 reticle for 18" wide targets. By putting an 18" width target in between the vertical stadia line and the corresponding range indicators on the left-hand side, the approximate range to the target can be achieved from 100 to 300 yards.



RANGING WITH A MILRADIAN RETICLE

If your target's dimensions are known you may use a Mil Relation formula to get an approximate range. Start by measuring your target with the reticle to get the target size in Mils.

a. This is done by placing one edge of the target on a holdover line using the vertical or horizontal stadia holds and counting the holds to the other edge.

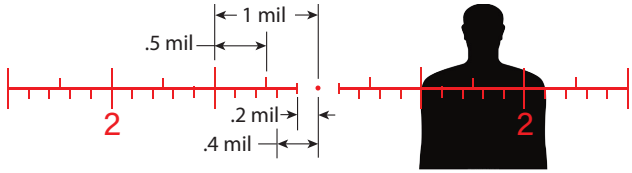
b. If the target dimension is known (such as a man's shoulder width of 18"), measure the target through the scope by using the stadia markings of the reticle. Once you have your target size in Mils plug the information into one of these formulas to get the estimated range to your target.

If you plan on engaging the same size target you can use the first portion of the formulas as a constant and plug in the target size in Mils.

$$\text{Distance to Target (Meters)} = \frac{\text{Target Size (Inches)} \times 25.4}{\text{Target Size (Mils)}}$$

$$\text{Distance to Target (Yards)} = \frac{\text{Target Size (Inches)} \times 27.77}{\text{Target Size (Mils)}}$$

$$\text{Example: } \frac{18 \times 27.77}{1.2} = 416.6 \text{ yds}$$



ZEROING YOUR SCOPE

Your MVO™ 1-8x28 FFP scope uses 0.1 MRAD per click windage & elevation (W/E) turrets. The laser engraved letters and arrows (U = Up, R = Right) on the face of the turrets refer to directional change in point of impact (POI). The windage and elevation turrets are zero resettable.

BORE-SIGHTING

To zero the scope, we suggest bore-sighting first to get as close as possible on your target. Bore Sighting can save you time and ammunition.

A simple and reliable method is to look through the bore of your rifle barrel with the action open (or bolt removed) at a target at 50 or 100 yards.

Adjust the elevation and windage turrets until the reticle is centered on the target, keeping the target centered in the bore during this process. This should get you relatively close on the target, allowing you to further dial in your rifle for desired zero.

You may also use a laser bore sighter to accomplish the same result.

Once bore-sighted, shoot a 5-shot group at your intended zero distance. Make sure to aim at the same spot (likely the bullseye) every time. Make any necessary adjustments to the windage and elevation so that the point of impact (POI) is the same as your point of aim (POA) at the bullseye. Your scope is zeroed once this is achieved at your intended zero distance.

MAKING ADJUSTMENTS

The MVO™ 1-8X28 FFP scope features lockable W/E adjustment turrets that incorporate a mechanically lifting design allowing for multi-turn functionality. Turrets are "locked" at the factory and preset at the middle of the rifle-scope's total adjustment range.

ELEVATION ADJUSTMENTS

To make elevation adjustments, first pull out the exposed elevation turret until it is unlocked.

To move the bullet impact up on the target, rotate the turret Counterclockwise (CCW). To move the bullet impact down on the target rotate the turret clockwise (CW).

The dual-row engraving allows for quick visual tracking references for most short-to-long-distance shooting scenarios. The current turret rotation will be shown by the numbers . Zero is represented with a horizontal line at the top of the delta indicator.

Once adjustments have been made, simply push the exposed turrets back in until they lock and adjustments can no longer made.

ELEVATION ADJUSTMENT VALUES:

The per-click value is 0.1 MRAD per click.

The complete travel for one full rotation of the elevation turret is 10 MRAD.

The total travel adjustment range for the elevation turret: 'UP' = 19 MRAD, 'DOWN' = 13.5 MRAD

WINDAGE ADJUSTMENTS

From the UNLOCKED position, counterclockwise (CCW) adjustment rotation is for rightward bullet impact on target, and clockwise (CW) adjustment is for leftward bullet impact on target.

The locking feature protects the chosen turret setting by pushing in on the turret knob to lock the turret. To adjust the turret setting, unlock the turret by pulling out on the turret knob.

WINDAGE ADJUSTMENT

Once adjustments have been made, simply push the exposed turrets back in until they lock and adjustments can no longer made.

WINDAGE ADJUSTMENT VALUES:

The per-click value is 0.1 MRAD per click.

The complete travel for one full rotation of the elevation turret is 10 MRAD.

The total travel adjustment range for the elevation turret is 15 MRAD. (LEFT = 7.5 MRAD, RIGHT = 7.5 MRAD)

HOW TO RE-INDEX TURRETS TO ZERO

After your scope is zeroed, you may reposition the W/E dials so that the zero mark on the turret is in line with the witness mark on the scope body. The purpose of this is to ensure the shooter can more easily and quickly return their turrets back to their original zero position after having made any adjustments from it.

To reposition the dials, make sure the turrets are in the locked (DOWN) position.

a. There are two set screws on the side near the top edge of the turret caps. Using the provided 1.5mm wrench, back the set screw out 1 turn so the turret cap is disengaged (do not remove set screws).(1)
b. Rotate the loosened turret cap until the zero mark is in line with the witness mark on the scope body.
c. Gently tighten both set screws until the turret is secure and reengages.

The witness mark incorporates 3 horizontal lines indicating a complete revolution of the turret per line. The middle and longest line also indicates the mechanical zero of the scope.

Once you've re-indexed your turrets to zero, you may confirm the rifle and scope zero by firing 2–3 additional shots on the sight-in target, at the sight-in distance, to reconfirm the previously established zero.

CARE AND MAINTENANCE

Do not expose your riflescope to extreme heat over prolonged periods of time.

One of the best ways to protect your investment is to use the protective scope flip caps provided with your MVO™ riflescope. To further protect your riflescope, keep your product clean and free of sand, dirt, saltwater and other various contaminants.

LENSES: To clean lenses, remove any large particles with an optical lens brush. To remove fine particles, use the provided microfiber cloth. If the cloth becomes soiled, wash in lukewarm soapy water and leave to air dry. To further clean the lenses, you may use pure alcohol, high-grade glass cleaner, or distilled water on a cotton swab. To ensure long-lasting high performance, keep lens surfaces free of dirt, oil, grease, etc.

NOTE: To best protect the lenses, close the provided lens caps when the scope is not in use.

ADJUSTABLE FEATURES: When any adjustment turret is loosened, keep it free of any liquids, dirt, or dust debris.

SCOPE BODY: If dirt, dust, fingerprints, etc. accumulate on the scope body, simply wipe the body down with a clean dry cloth. Do not use the included microfiber cloth. You may also rinse the riflescope under a stream of lukewarm water, then wipe it down with a soft, clean tissue. DO NOT use strong solvents to clean your riflescope or its optics.

STORAGE: Store your scope in a well-ventilated, dry, and dark place. If the scope is wet, dry the scope prior to storage. If storing for an extended period of time, remove the battery from the scope.


MEPROLIGHT®
4 5 6 7 8
1 CLICK = 0.1 MRAD
R
4 3 2 1
REPTILIA
AUS MOUNT
34MM Ø - 30MM HEIGHT
MADE IN USA
CAGE:83XH0
MEPROLIGHT

MEPROLIGHT®

SK GROUP MEMBER

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