



**RITON**

**1 PRIMAL**

4-12X50 RIFLESCOPE



## TABLE OF CONTENTS

|    |                                            |
|----|--------------------------------------------|
| 3  | OPTIC SPECIFICS                            |
| 4  | TECHNICAL SPECIFICATIONS                   |
| 5  | EXPLANATION OF MOA OR MRAD                 |
| 6  | EXPLANATION OF FIRST OR SECOND FOCAL PLANE |
| 6  | ILLUMINATION SYSTEM (IF APPLICABLE)        |
| 7  | RETICLE INFORMATION & SUBTENSIONS          |
| 8  | FAST FOCUS EYEPIECE                        |
| 8  | EXPLANATION OF PARALLAX (IF APPLICABLE)    |
| 9  | FACTORY ZERO, WINDAGE AND ELEVATION        |
| 9  | ZERO STOP OR ZERO RESETTABLE TURRETS       |
| 10 | MOUNTING THE RITON OPTIC                   |
| 10 | EYE RELIEF AND RETICLE ALIGNMENT           |
| 11 | BORE SIGHTING                              |
| 11 | ZEROING THE RIFLESCOPE                     |
| 12 | TROUBLESHOOTING                            |
| 12 | WARRANTY                                   |

# THANK YOU FOR CHOOSING RITON OPTICS.

We know that you have many options and we are thankful for selecting Riton as your optics provider.

Here at Riton we have an unwavering passion for offering high quality optics at the industry's most competitive prices and matched by incredible service. You will see the difference in everything we do because we are different, and we developed this company to be exactly that so that you, the consumer, get everything you deserve. If you are ever in need of additional information or assistance, please contact us. We are here to continually serve you as a valued partner.

"RITON WAS BUILT OUT OF THE BELIEF THAT A PERSON'S HARD-EARNED DOLLAR SHOULD BUY QUALITY OPTICS AND THE BEST SERVICE AT EVERY PRICE POINT."

# 1 PRIMAL 4-12X50

## OPTIC SPECIFICS

The 1 Primal 4-12×50 is the optimal hunting scope. The 12x magnification allows you to see in fine detail while the 50mm objective and illuminated red dot reticle is great in low light situations. With a budget friendly price tag, the 1 Primal 4-12×50 riflescope features crystal-clear Riton HD glass, an integrated throw lever and fully multi-coated lenses. Complete with a 1-inch tube and capped, zero resettable turrets, this is a best in class, best value optic.

## DETAILED PRODUCT FEATURES:

- / Featuring Capped, Zero Resettable Turrets
- / Integrated Removable Throw Lever
- / 1/4 MOA Windage and Elevation Adjustment
- / Illuminated Red Dot Reticle
- / Fast-Focus Eyepiece
- / Assembled in EP-Level Clean Room
- / 100% Waterproof, Fog Proof and Shockproof (tested up to 1200 G's)

### FAST FOCUS EYEPIECE

### THROW LEVER

### ELEVATION

### ILLUMINATION

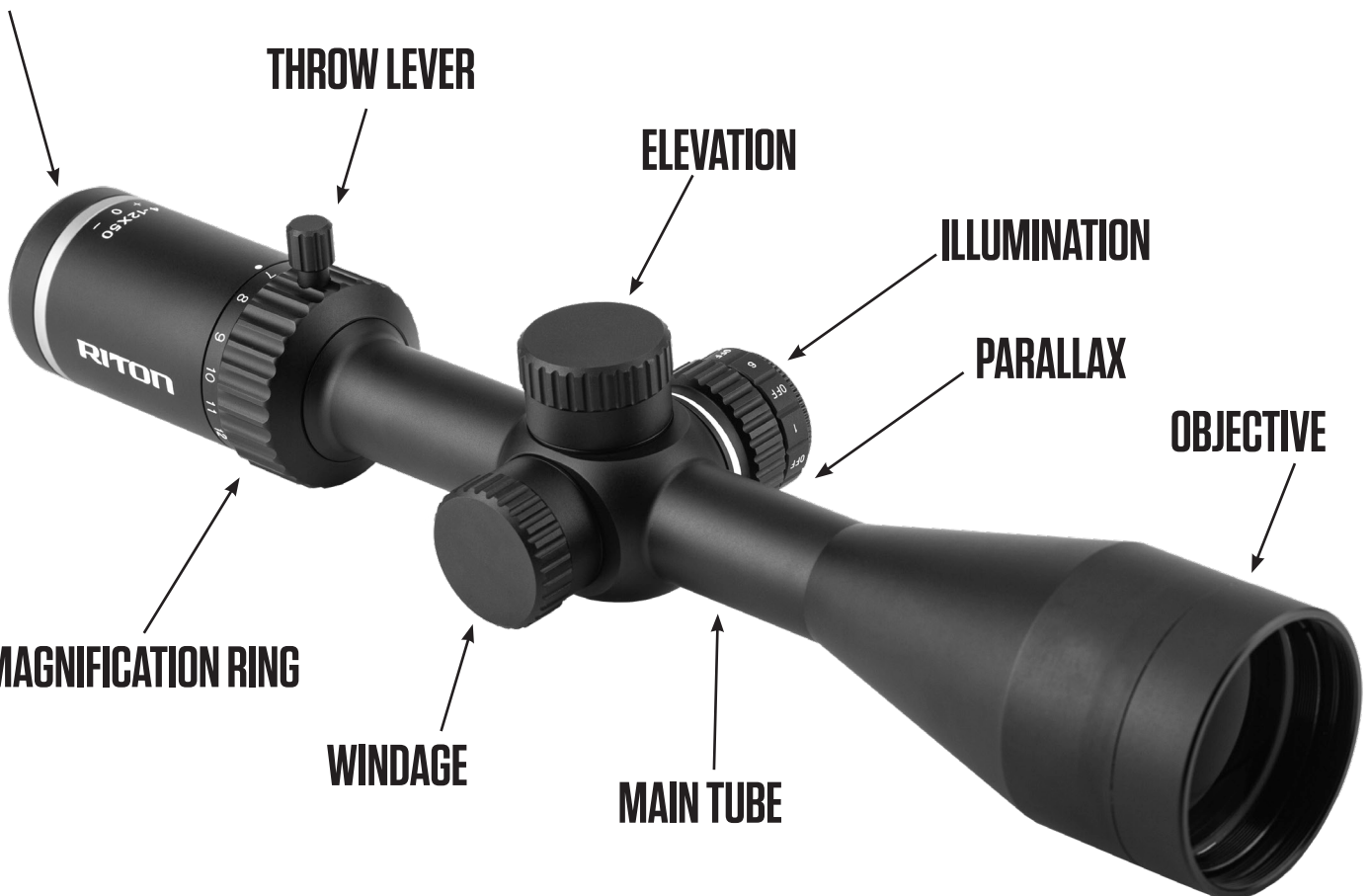
### PARALLAX

### OBJECTIVE

### MAGNIFICATION RING

### WINDAGE

### MAIN TUBE



# TECHNICAL SPECIFICATIONS



|                            |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| MAGNIFICATION:             | 4-12                                                                         |
| PARALLAX ADJUSTMENT:       | 20-infinity                                                                  |
| TUBE DIAMETER:             | 1 Inch                                                                       |
| OBJECTIVE LENS DIAMETER:   | 50mm                                                                         |
| FOCAL LENS POSITION:       | Second Focal Plane                                                           |
| LENS COATING:              | Fully Multi-Coated, Full Wide Band, Waterproof Coated, Low Light Enhancement |
| RETICLE:                   | RDH, Illuminated                                                             |
| FIELD OF VIEW AT 100 YDS:  | 24.7ft - 8.4ft                                                               |
| MATERIAL:                  | 6061-T6 Aircraft Grade Aluminum                                              |
| EYE RELIEF:                | 3.4in/87mm                                                                   |
| EXIT PUPIL:                | Low 13.7mm - High 4.7mm                                                      |
| CLICK VALUE AT 100 YDS/MM: | 1/4 MOA                                                                      |
| ADJUSTMENT RANGE:          | 60 MOA                                                                       |
| MOUNTING LENGTH:           | 5.25in/133.4mm                                                               |
| LENGTH:                    | 13in/330mm                                                                   |
| WEIGHT:                    | 28.8oz/816g                                                                  |

# EXPLANATION OF MINUTE OF ANGLE (MOA)

MOA unit of arc measurements are based on degrees and minutes. There are 360 degrees in a circle and 60 minutes in a degree for a total of 21,600 minutes (MOA) in a circle. A minute of angle will subtend 1.05 inches at a distance of 100 yards.

# EXPLANATION OF MILLIRADIANS (MRAD)

MRAD unit of arc measurements are base on the radian. A radian is the angle subtended at the center of a circle by an arc that is equal in length to the radius of the circle. There are 6.283 radians in all circles and 1000 milliradian in a radian for a total of 6283 milliradians (MRAD's) in a circle. An MRAD will subtend 3.6 inches at a distance of 100 yards.

## ADJUSTING YOUR SCOPE

Use the chart's below to determine the clicks needed to adjust your point of impact.

### BASED ON 1/4 MOA ADJUSTMENTS

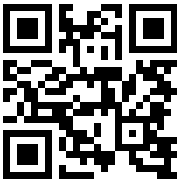
| 100 YARDS | 200 YARDS | 300 YARDS | 400 YARDS | 500 YARDS |
|-----------|-----------|-----------|-----------|-----------|
| .25 IN    | .50 IN    | .75 IN    | 1 IN      | 1.25 IN   |

\*Graduations can be calculated at additional distances beyond 500 yds.

### BASED ON 1/10 MRAD ADJUSTMENTS

| 100 YARDS | 200 YARDS | 300 YARDS | 400 YARDS | 500 YARDS |
|-----------|-----------|-----------|-----------|-----------|
| .36 IN    | .72 IN    | 1.08 IN   | 1.44 IN   | 1.80 IN   |

\*Graduations can be calculated at additional distances beyond 500 yds.



For more information on MOA and MRAD, scan the QR code above for an in depth video from Riton University



## FIRST FOCAL PLANE (FFP) RETICLE OR SECOND FOCAL PLANE (SFP) RETICLE

The reticle in your Riton riflescope is either a Second Focal Plane (SFP) or First Focal Plane (FFP) depending on the one you chose. SFP reticles are located in the rear of the image erecting and magnifying lenses. The advantage of an SFP reticle is that it always maintains the same appearance. Shooters using the reticle hash marks should be aware that the listed subtensions that are used for estimating range, holdover and windage correction are at the maximum magnification.

### TO CHANGE MAGNIFICATION:

Simply turn the magnification ring to the desired magnification level. Lower power's offer a wider field of view while higher power's offer a zoomed in focused view.



For more information on First Focal Plane and Second Focal Plane, scan the QR code above for an in depth video from Riton University

## ILLUMINATION SYSTEM

The variable intensity reticle illumination system aids in low light situations.

### TO ACTIVATE THE ILLUMINATION:

Rotate the adjustment knob in either direction. There are six levels of brightness with off positions between each brightness setting.

### TO CHANGE THE BATTERY

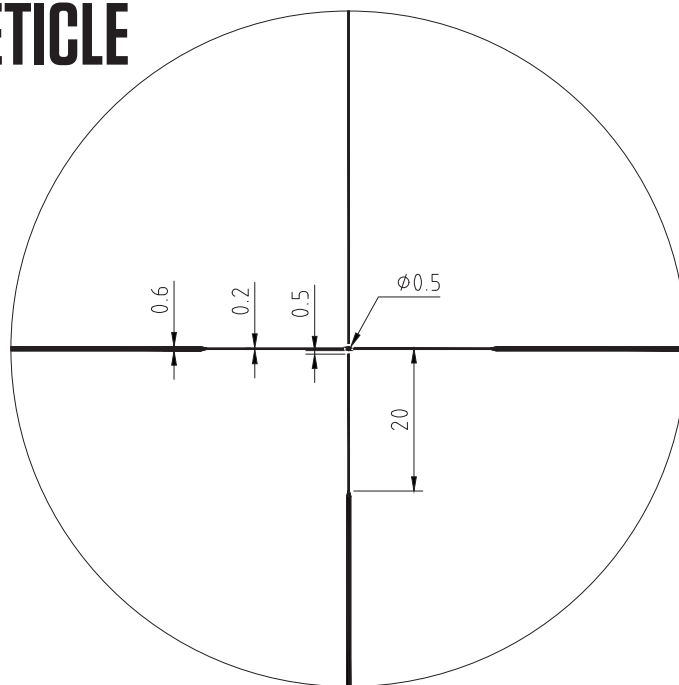
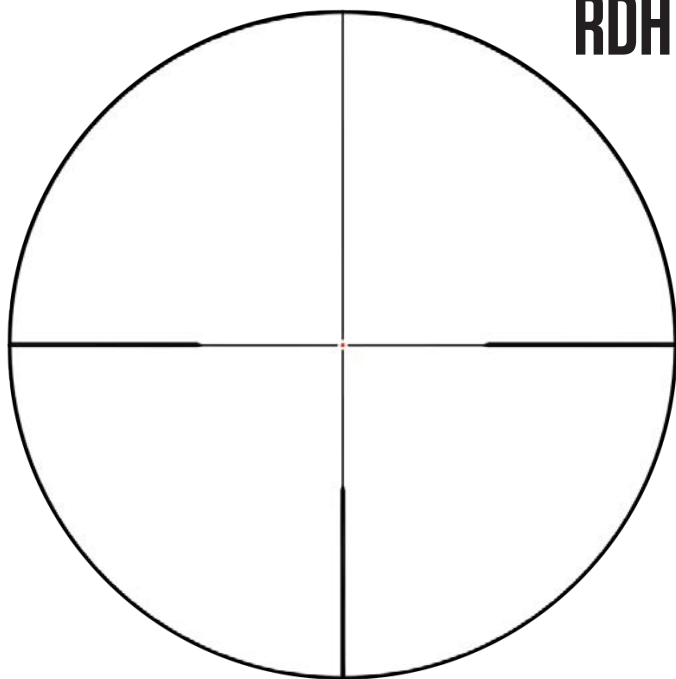
Unscrew the outer cap located on the illumination/parallax knob, then replace with a new CR2032 Battery.



# RETICLE INFORMATION

The Riton 1 Primal 4-12x50 is equipped with the RDH Reticle.

## RDH RETICLE





## FAST FOCUS EYEPIECE

The Riton fast focus eyepiece is designed to quickly and easily adjust the focus on the rifle-scope's reticle.

### TO ADJUST THE RETICLE FOCUS:

1. Look through the scope on max magnification at a blank white wall or white paper
2. Turn the eyepiece in or out until the reticle image is as crisp as possible.



## EXPLANATION OF PARALLAX

Parallax describes a situation where the focal plane of the object in the scope is offset from the reticle. If you have parallax, you have an optical illusion that must be corrected. Parallax should not be confused with focus. Parallax compensation changes neither the focus of the reticle nor the focus of the image; it simply moves the planes at which these two objects are in focus so that they share the same plane.

### TO ADJUST THE PARALLAX:

1. Set your fast focus eye piece for your eye. Look at a blank backdrop and turn your eye piece in and out until you have a crisp and sharp reticle.
2. Look through the scope and place the reticle cross-hair on target. Move your head around without leaving your exit pupil. Does the cross hair move or become out of focus?
3. If the reticle cross-hair moves or is out of focus, adjust the side parallax until your sight picture is crystal clear.

NOTE: The illumination knob allows for 6 levels of brightness with off points between each setting.



# MECHANICAL ZERO

Your Riton riflescope is pre-set from the factory with the reticle in the center of the adjustment ranges.

## TO FIND FACTORY ZERO:

1. Dial the turret one direction until it will no longer rotate.  
NOTE - Do not force the turret past it's stopping point.
2. Dial the turret opposite direction counting how many MOA it turns.
3. Divide that total number of MOA in half and dial to that number for your factory zero.
4. Complete this procedure for both windage and elevation dials to approximately center the reticle.



# SETTING THE ZERO RESET TURRETS

By zeroing the rifle at 100 yards, the shooter can calculate how many clicks of adjustment are needed for different distances or wind conditions.

## TO SET ZERO RESET TURRETS AFTER YOUR RIFLE IS SIGHTED IN:

1. Loosen the screw from top of the turret and take off the elevation knob.
2. With provided Allen wrench, loosen the 2 outer screws on the shim found in the box. The shim is a small black disk with a hole in the middle.
3. Hand thread the shim onto the turret post and dial it down until it stops. No tools are necessary for this step, just hand tighten.
4. Tighten the two outer shim screws with the provided tool. NOTE: The screws just need to be snug. DO NOT over tighten.
5. Put the elevation knob back on with the zero line aligned with the indicator mark and tighten down the top screw.



For more information on Zero Reset and Zero Stop Turrets, scan the QR code above for an in depth video from Riton University

# SETTING THE ZERO STOP TURRETS

By zeroing the rifle at 100 yards, the shooter can calculate how many clicks of adjustment are needed for different distances or wind conditions.

## TO SET ZERO STOP TURRETS AFTER YOUR RIFLE IS SIGHTED IN:

1. Loosen the three screws located around the circumference of the elevation knob.
2. Remove the elevation knob by pulling straight up, this should come right off if the retaining screws have been loosened enough.
3. Underneath the elevation knob you'll notice the zero stop, it's shaped like a horse shoe. Rotate the zero stop counter-clockwise,, making sure that the horse shoe is pointing towards the left side of the turret.
4. Place the elevation turret back on with the zero line aligned with the indicator mark and tighten down the retaining screws.



## MOUNTING YOUR RITON RIFLESCOPE

Always use high quality rings or a mount that match your optic's main tube diameter.

### TO MOUNT YOUR RITON RIFLESCOPE:

1. Mount the bottom half of the rings or mount on the mounting base of your rifle.
2. Place the riflescope on the bottom ring halves and loosely install the upper ring halves so that your riflescope is able to move between rings.
3. Before tightening the ring screws, adjust for maximum eye relief to avoid injury from recoil.
4. Tighten the scope rings per the torque specs of the rings or mount.



For more information on Mounting, scan the QR code above for an in depth video from Riton University

## EYE RELIEF AND RETICLE ALIGNMENT

### TO SET A PROPER EYE RELIEF AND RETICLE ALIGNMENT:

1. Set the riflescope magnification to the highest setting.
2. Slide the riflescope as far forward as possible in the rings.
3. While looking through the riflescope in a normal shooting position, slide the riflescope back towards your face, paying attention to the field of view. Just as the full field of view is visible, stop the movement of the riflescope.
4. Without disturbing the front-back placement, rotate the riflescope until the vertical cross-hair exactly matches the vertical axis of the rifle. Use of a reticle leveling tool, a weight hung on a rope, or bubble levels will all help with this procedure.
5. After aligning the reticle, tighten and torque the ring screws down per the manufacturer's instructions.

## BORE SIGHTING

Bore sighting is a preliminary procedure to achieve proper alignment of the scope with the rifle's bore. Initial bore sighting of the riflescope will decrease the amount of time and ammunition you need to use at the range.

This can be done by using a mechanical or laser bore sighter according to the manufacturer's instructions or by removing the bolt and sighting through the barrel on some rifles.

### TO BORE SIGHT YOUR RIFLESCOPE:

1. Place the rifle solidly on a rest and remove the bolt.
2. Sight through the bore at a target approximately 50 yards away.
3. Move the rifle and the rest until the target is visually centered inside the barrel.
4. With the target centered in the bore, make windage and elevation adjustments until the reticle cross-hair is also centered over the target.

Note - If a laser bore sighting or any other similar device inside the bore was used, it must be removed before firing. An obstructed bore can cause serious damage to the gun and possible injury to the shooter.

## ZEROING THE SCOPE

### IMPORTANT SAFETY CHECKS:

- Always check your weapon and surroundings for safety.
- Follow all weapon manufacturer safety guidelines.
- Always shoot from a solid rest using consistent and proper form.
- Be sure that your target is level to aid in accurate sight-in process.

### TO ZERO THE SCOPE:

1. Start the sight-in process from 25 yards. From a solid rest fire one 3-shot group, ensuring that you fire at same spot each time. Use the grid lines on your target to center and level your cross-hairs.
2. After the first 3-shot group, make adjustments to bring bullet impact to the center of target you're shooting at. Repeat this process at 100 yards and you will have an accurate 100 yard zero.



For more information on Bore Sighting and Zeroing your scope, scan the QR code above for an in depth video from Riton University

## TROUBLESHOOTING

Problems thought to be associated with your riflescope are often actually mount problems. Take the time to ensure the mounts are tight to the rifle and that scope is secured and does not twist or move in the rings. Confirm that the correct base and rings are being used and that they are in the proper orientation. Be sure to torque your rings per the manufacturer's spec

Keep in mind there are many issues that can cause poor bullet grouping. Always utilize a solid rest and maintain good shooting technique. Have a qualified gunsmith look over your rifle to be sure all things are in working order. See that the action and barrel are properly cleaned. Some rifles and ammunition don't work well together, try different ammunition and see if accuracy improves.

## RITON PROMISE WARRANTY

As a part of the Riton Promise we believe in providing you with the best possible service, including the industry's best warranty. The quality of our products makes this the best warranty you'll likely never have to use; however, as hunters and outdoorsmen and women, we know that bad things sometimes happen to even the most cautious.

### OUR WARRANTY IS SIMPLE:

- No proof of purchase or registration required for your Riton products.
- Lifetime warranty regardless of original purchaser.
- All warranty replacements will receive a brand-new product off the shelf. We will not ever replace the product with a repaired or refurbished product.
- Replacement product will be shipped within 48 hours of receiving and approving your return.
- Loss, theft and/or deliberately worn and damaged products are not covered. Warranty is VOID if damage results from unauthorized repair or alteration.



1-855-39-RITON

INFO@RITONOPTICS.COM

RITONOPTICS.COM