



PENTALUX TAC-V FFP 4X-20X
INSTRUCTIONAL MANUAL



CONGRATULATIONS! You have just purchased the advanced Hi-Lux Optics PentaLux TAC-V variable rifle scope. At Hi-Lux Optics, we are constantly challenging ourselves to push the envelope of innovation forward.

Featuring the new 5X front focal plane optical system, the PentaLux TAC-V 4-20X FFP was designed with the needs of the tactical and competitive shooter in mind.

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Constructed from a solid 30 mm aircraft grade aluminum tube, the PentaLux TAC-V FFP 4-20X comes equipped with large positive click elevation and windage adjustment turrets. All glass lenses in the PentaLux 4-20X FFP are fully multi-coated with DiamondTuff14 for maximum light transmission. Nitrogen purging and rubber gasket seals guarantee fogproof performance in all temperatures and climates. As the PentaLux TAC-VF 4-20X FFP is a 1st Focal Plane scope, the reticle can be used for holdover at any power!

Unlike many other optics manufacturers, we build rifle scopes the right way. From optical system design to eliminating optical

shift when changing magnification, every step of the Hi-Lux manufacturing process requires painstakingly meticulous attention to detail.

Whether you are punching holes in paper at 100 yards, competing in precision rifle series matches, or shooting extremely long ranges, the PentaLux TAC-V 4X-20X FFP scope will get the job done!

PENTALUX TAC-V FFP 4X-20X

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SECTION 1

SPECIFICATIONS AND BASIC DEFINITIONS

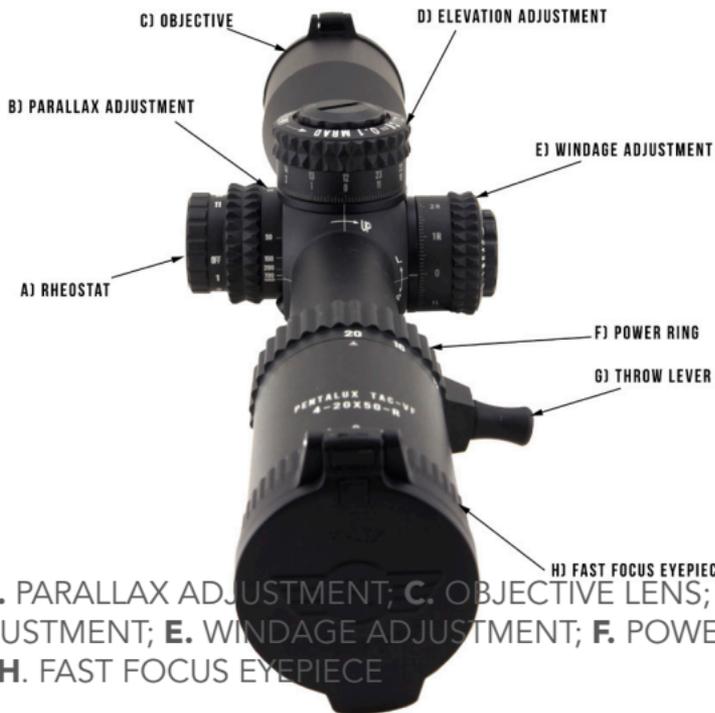
(1) PENTALUX TAC-V FFP SERIES SPECIFICATIONS :

Model	Power	Obj. (mm)	Tube (mm)	F.O.V.@ 100 Yds (Feet)	Eye Relief (Inch)	Length (Inch)	Weight (O.Z.)	Exit Pupil Range In Variable (mm)	Elevation Total adj. (MOA)	Windage Total adj. (MOA)
TAC-V 420X50 FFP	4-20x	50	30	28.3' - 5.7'	3.6"	14.9"	27.9	12.5 - 2.5	80 MOA	60 MOA

The PentaLux TAC-V FFP 4-20x50 mm rifle scope has Mil-Radian click adjustments for both Elevation and Windage. Each click moves the point of impact 0.1 MRAD. One full revolution is 12 MRAD (41.24 MOA). The scope comes with flip-open lens covers, and power ring throw lever.

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(2) BASIC DEFINITIONS:



A. RHEOSTAT; **B.** PARALLAX ADJUSTMENT; **C.** OBJECTIVE LENS; **D.** ELEVATION ADJUSTMENT; **E.** WINDAGE ADJUSTMENT; **F.** POWER RING; **G.** THROW LEVER; **H.** FAST FOCUS EYEPIECE

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SECTION 2

ADJUSTING THE DIOPTER AND RHEOSTAT

Hold the scope between three to four inches from your eye and look through the eyepiece in a well lit environment. Aim at a featureless, flat area such as a wall or the open sky. If the reticle is not sharply defined at first glance, turn the **Fast Focus** eyepiece in or out for adjustment until the reticle appears in sharp focus.

The PentaLux TAC-V FFP is equipped with a red or green illuminated MRAD etched glass reticle. The rheostat has 11-positions for varying the brightness of reticle illumination. For best results in a low light situation, we recommend that you set the brightness as low as possible while maintaining clear vision of the reticle. The settings 1 to 5 are for low light illumination. The settings 6 to 9 are the intermediate brightness settings. The settings 10 & 11 are the brightest settings. The off setting indicates that the illumination has been turned off. The reticle is still visible when the illumination has been turned off.

The rheostat is positioned left of the parallax adjustment. The battery compartment,

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located underneath the cap on the rheostat knob, accepts standard CR2032 3V lithium coin batteries. When replacing batteries, place the CR2032 battery with “+” side facing up and retighten the cover.

WARNING: NEVER LOOK DIRECTLY AT THE SUN WITH THIS SCOPE, OR EVEN THE NAKED EYE. YOU COULD PERMANENTLY DAMAGE YOUR EYES.

SECTION 3

MOUNTING YOUR RIFLE SCOPE

To maximize the accuracy of your rifle, you must first properly mount your riflescope. You should use a high-quality mount with bases designed to fit your particular rifle.

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To mount the scope:

- A. The scope should be mounted as low as possible without touching either the barrel or the receiver.
- B. Look through the scope in your normal shooting position. Adjust the scope (either forward or backward) until you find the furthest point forward (to ensure maximum eye relief) that allows you to see a full field of view.
- C. Rotate the scope in the rings until the reticle pattern is perpendicular to the bore. You can also use a level to measure the amount of cant in the reticle. Check to make sure that the elevation turret is on top.
- D. Tighten the mounting screws. We recommend that you tighten the rings to no more than **15 INCH LBS** of torque.

WARNING: AVOID OVER-TIGHTENING THE RINGS. THIS CAN DAMAGE THE SCOPE, AFFECTING PERFORMANCE OR RENDERING IT INOPERABLE. THERE SHOULD BE A SLIGHT EVEN GAP BETWEEN THE UPPER AND LOWER HALVES OF THE RINGS. BE SURE THAT THE SCOPE IS MOUNTED FAR ENOUGH FORWARD. ITS REARWARD MOTION MAY INJURE THE SHOOTER WHEN THE RIFLE RECOILS.

SECTION 4

PRE-ZEROING

Pre-zero sighting can be done either manually, or with a bore-sighting device.

To bore sight manually,

- A. It is necessary to be able to see through the bore from the breech end. In the case of a bolt action, this usually means removing the bolt.
- B. If your scope has parallax adjustment, set it for the range to the target.
- C. Set the variable-power scope to its lowest power.
- D. Look through the bore and center the target in the bore. Adjust the elevation and windage turrets to position the reticle on the center of the target.
- E. Turn the windage turret clockwise to move the point of impact right and counterclockwise to move the point of impact left.
- F. Turn the elevation turret clockwise to lower the point of impact and counterclockwise to raise the point of the impact.

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- G. If you require a large amount of adjustment to align the reticle, we recommend that you make approximately one-half of the windage correction, then approximately one-half of the required elevation correction.
- H. Finish by applying the remaining windage and elevation correction.

If you can't see through the bore then it will be necessary to use some type of bore-sighting device. When using a bore-sighting device, follow the instructions provided with the boresighter.

NOTE: If your mounting system allows for external adjustment, we recommend that you make the majority of windage adjustment externally in the mount. Save the internal scope adjustment for fine tuning your shot placement.

SECTION 5

ZEROING

This turret has MRAD adjustment. Each click is 0.1 MRAD. After you zero the scope you can back out the top screw on the elevation and windage turrets to re-index the turret markings to your zero.

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The zeroing range will depend on your shooting/hunting conditions.

- A. In general, if most of your shots will be at short range, zero your scope at 100 yards. For long-range shooting at big game, most experienced shooters zero-in at 200 yards.
- B. If the scope has parallax adjustment set it to the range to the target. Set variable-power scopes to the highest power.
- C. From a rested position, fire three rounds at the target.
- D. Observe the center of the points of impact on the target and adjust the windage and elevation screws as needed to bring the point of aim to the desired relationship to the points of impact. The point of impact moves in the direction indicated on the adjustment by the amount indicated.
- E. Repeat as necessary.
- F. Once the zeroing of the rifle is completed, you can reindex the windage and elevation turrets caps to prevent losing your zero.

Each click of the adjustment changes bullet impact at 100 meters by the 1 cm. To calculate the click value at distances other than 100 meters, use the following formula: $(Distance_in_meters)/100 * adjustment_click_value_at_100m$. This will give

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you the actual click value of the scope at that distance.

For Example: Your range is 200 meters. Actual click value at 200 meters = $(200 \text{ meters})/100 * 1 \text{ cm} = 2 \text{ cm}$. Thus, the adjustment at 200 meters is 2 cm per click. For 400 meters, you would multiply 1cm by 4 and that would give 4 cm per click and so on.

Once the zeroing of the rifle is completed, you can re-index the adjustment turrets to your zero by backing out the top screw on the windage and elevation knobs. Next, pull the adjustment off and realign the 0 on the turrets with the adjustment indices. Once you have realigned the 0 on the turrets with the indices, tighten the top screw back down.



WARNING: ALL SHOOTING SHOULD BE DONE AT AN APPROVED RANGE, OR SAFE AREA. EYE AND EAR PROTECTION IS RECOMMENDED.

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SECTION 6

PARALLAX CORRECTION

The parallax adjustment turret is located on the left side of the scope turblock. It corrects parallax at various user-selected ranges from 10 meters up to infinity. To be parallax free, the target must be located at the distance for which the scope is focused. Targets at any other distance will cause parallax. Parallax manifests itself as apparent movement of the reticle against a stationary target.

SECTION 7

MAINTAINING YOUR RIFLESCOPE

Your scope, though amazingly tough, is a precision instrument that deserves reasonable and cautious care. For normal maintenance:

- A. Do not attempt to disassemble or clean the scope internally.

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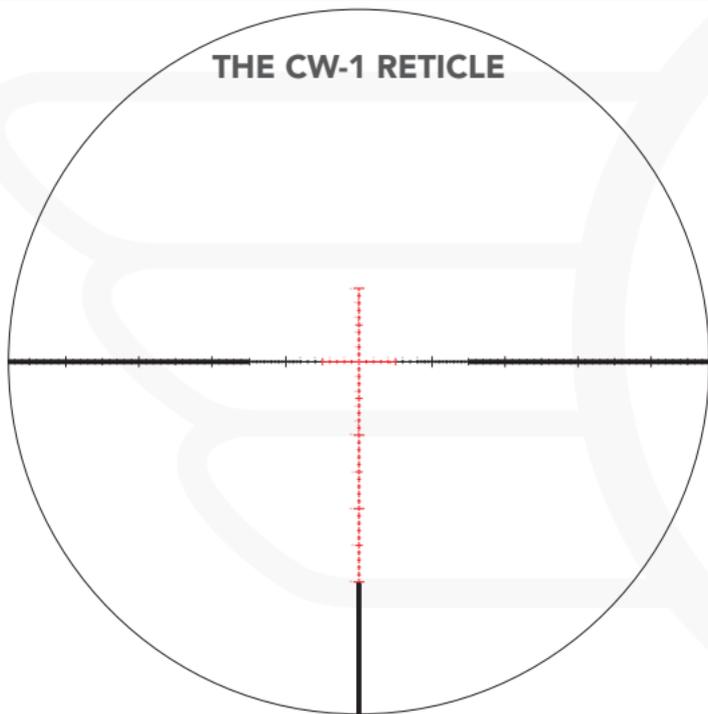
- B. The external optical surfaces should occasionally be wiped clear with the lens cloth provided or an optical quality lens paper.
- C. Keep the protective lens covers in place when the scope is not in use.
- D. Remove any external dirt or sand with a soft brush so as to avoid scratching the finish.
- E. Wipe the scope with a damp cloth, followed by a dry cloth.
- F. Then go over the metal portions of the scope with a silicon treated cloth in order to protect the scope against corrosion.
- G. Store the scope in a moisture-free environment.
- H. Avoid storing the scope in a hot place, such as the passenger compartments of a vehicle on hot days. The high temperatures could adversely affect the lubricants and sealants. A vehicle's trunk, a gun cabinet or a closet are the preferred storage locations.
- I. Never leave the scope where direct sunlight can enter either the objective or the eyepiece lens. Damage may result from the concentration of the sun's rays (burning glass effect).

WARNING: UNNECESSARY RUBBING OR USE OF A COARSE CLOTH MAY CAUSE PERMANENT DAMAGE TO LENS COATINGS.

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SECTION 8

THE CW-1 RETICLE



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The CW-1 reticle is a First Focal Plane Mil-Radian based ranging reticle. This reticle can be used for holdover at any magnification.

Based in Mil-Radian, the CW-1 reticle indicates 0.2 mil subtensions on the horizontal axis from the center to 8 Mils on each side.

From 8 Mils to 15 Mils on the horizontal axis, the markings subtend 0.1 Mils. There are a total of the 30 mils subtended between the thicker horizontal posts.

On the vertical axis, there are 0.1Mil holes to indicate every half Mil.

The tickmark for every 5th Mil on the horizontal axis measures 1 Mil. The tickmark for every 10th Mil on the horizontal axis measures 2 Mils.

The tickmark for every 5th Mil on the vertical axis measures 1 Mil. The tickmark for every 10th Mil on the vertical axis measures 1.5 Mils.

The center dot measures 0.05 Mil.

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SECTION 9

DIAMONDTUFF LIFETIME WARRANTY

Hi-Lux, Inc. warrants its products against defects arising from faulty workmanship, or materials, for the lifetime of the product. **Normal wear and tear is not covered under this warranty policy.** Any attempt to alter, dismantle or change the standard specifications of the products, will make this warranty null and void. This warranty is made to the original purchaser of the goods including all international sales, and applies only to the products purchased through our authorized distributors or dealers. The international warranty is subject to approval from our authorized distributor or us directly. The warranty is transferable. Warranty obligation is limited to the repair or replacement of any product returned to Hi-Lux, Inc. that is determined by the manufacturer to have defects arising from faulty workmanship or materials that adversely affect the satisfactory operation of the product. It should be noted that on items containing an etched glass reticle, that the occasional appearance of some small particles is common and not a warrantable repair. **We only have a one-year warranty for the electronic components that are contained**

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on the products. Hi-Lux, Inc. reserves the right to request proof of purchase and purchase date. To guarantee warranty service, the enclosed warranty form must be completed and returned within ten (10) days of purchase to establish all warranty rights between you, the original purchaser, and Hi-Lux, Inc. We assume no liability for any incidental or consequential damages, or incidental expenses. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you. No warranties are made, or are authorized to be made, other than those expressly contained herein. To file a claim under this warranty, please contact the Customer Service Department of Hi-Lux, Inc. at (310) 257-8142 to obtain a Return Authorization number (RA number). After receiving your RA number, please mark the number on the outside of the package; enclose the defective item with a brief explanation of the problem. Please be sure to include your name, address and phone number. Failure to obtain a RA number may result in either refusal upon delivery, or lengthy delays for warranty repairs and service required for the item returned to us. All scopes are to be shipped prepaid direct to Hi-Lux, Inc. and must include a check or money order in the amount of \$21 to cover return postage and handling, regardless of purchase date.

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Attn.: Warranty & Service Dept.

Hi-Lux, Inc.

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E-Mail: techservice@hi-luxoptics.com

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In the event of a non-warranty repair, you will receive an estimate prior to any work being done. This warranty gives you specific legal rights and you may have other rights, which vary from state to state. As defined by federal law, this is a limited warranty.



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