

Night Owl Optics®

NIGHT VISION

BINOCULAR LINE

OWNERS MANUAL



PLEASE READ

Excessive exposure to bright light, with power on, will destroy internal Image Intensifier Tube.

Night Vision device is designed for nighttime use only. Not for use in daylight conditions nor in lighted environments.

Keep lens caps on device when not in use to protect internal Image Intensifier Tube.

CAUTION: Do not point Infrared Emitter directly into eye at close range. Keep out of reach of children.

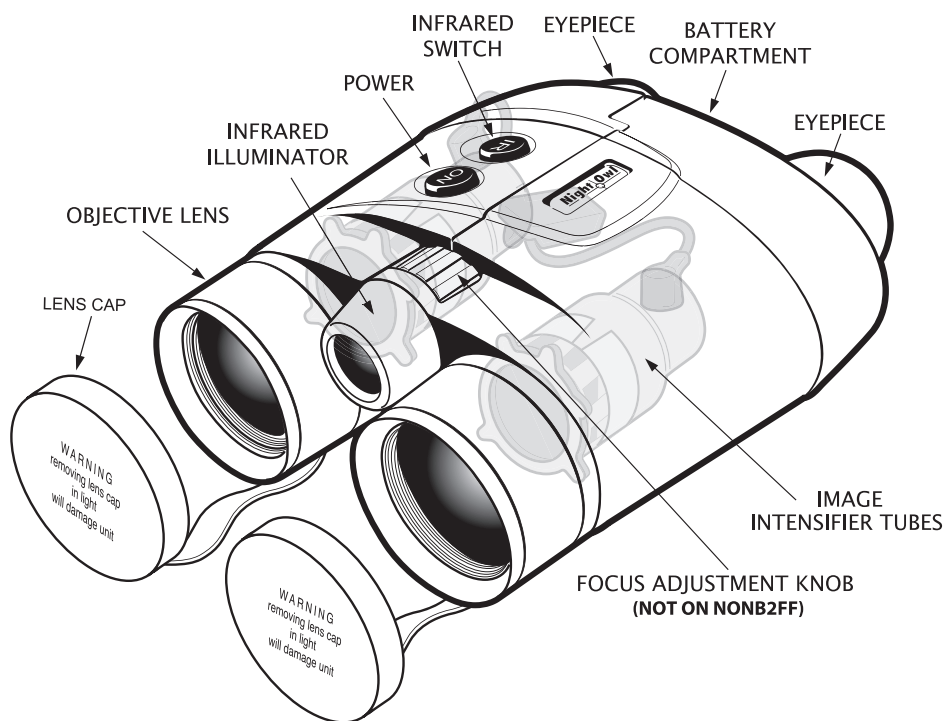
The infrared emitter emits a BRIGHT, although invisible, beam of light. As with any bright light, do not point into the eye.

Quick Start

GET FAMILIAR WITH THE DEVICE HOW TO FOCUS YOUR NIGHT VISION DEVICE

In a **LIGHTED** environment:

- Step 1** Install Battery (battery not included).
- Step 2** DO NOT REMOVE the LENS CAPS.
The pinholes in the lens caps let through a small amount of light.
Removing lens caps in daylight could damage the unit.
- Step 3** Rotate the EYEPIECES clockwise until they stop.
- Step 4** Press POWER button to turn device on.
Lens caps should still be installed on the device.
- Step 5** Look through the EYEPIECE.
Look at an object across the room, and rotate EYEPIECE until object comes into focus.



In a DARK environment:

Step 6 In the dark, remove LENS CAPS.

Step 7 Do NOT rotate EYEPIECES.

Step 8 Click on the INFRARED button.

A beam of infrared light, invisible to the human and animal eye, provides extra illumination.

Step 9 Move the FOCUS ADJUSTMENT KNOB to Focus on a specific object.

NOTE: Model # NONB2FF does not require this step.

Warning:

When the power is turned OFF, the image will not immediately disappear. It will remain visible for up to several minutes as the tube discharges. The discharge (fading of image) will be faster in higher light environments, slower in the dark.

**For technical assistance, call our customer service line at 1-800-444-5994.
If you have any problems, call before returning the product to the store where purchased.**

Image Quality

The image you see through a Night Vision device is VERY DIFFERENT from the image observed using day-time binoculars. A Night Vision image is electronically amplified and then reproduced on a phosphorus screen and therefore not as "clear" as a day-time binocular image.

Light and dark marks (spots) caused by the Electronic Intensifier Tube can be seen in the field of view. These are normal and are not defects in the Electronic Intensifier Tube.

Image sharpness is also not consistent across the field of view. The image has very high resolution in the center. The image becomes more distorted toward the periphery of the image. Due to our sophisticated corrective optics, the amount of distortion in your Night Vision device is less than the distortion found in other Night Vision devices.

IMPORTANT: You may see spots or other anomalies on the image when testing in a lighted environment with the lens cap on.

When using the device in the field with the lens caps removed, many of these anomalies will disappear. Testing indoors, with the lens caps affixed, focuses the light into a narrow beam through the center of the image intensifier tube; this causes light to reflect inside the device to produce spots on the phosphorus screen that many times will not be visible in the field.



Typical Image Appearance

Use of the Infrared Illuminator in a closed room, or at close range, will exaggerate the light and dark spots on the Electronic Intensifier Tube. The Infrared Illuminator, although invisible to human and animal eyes, is very bright at close range when viewed through the device. This bright light exaggerates the spots on the Electronic Intensifier Tube. Testing your Night Vision device indoors with the Infrared Illuminator, at close range, is not representative of the performance of the device in its intended outdoor application.

Performance under Various Light Conditions

Complete Darkness

Your Night Vision device works by amplifying available natural light. In complete darkness, with no available natural light, you cannot see without the use of the Infrared Illuminator (IR). The IR works like a flashlight, but the light beam projected out is invisible to human and animal eyes.

Half-Moon

A half-moon provides a substantial amount of ambient light to be amplified by the internal Electronic Intensifier Tubes. Without the assistance of the IR, you can recognize a man-sized object about 300 yards away.

Starlight (no moon)

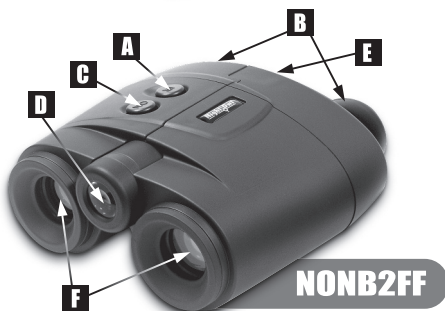
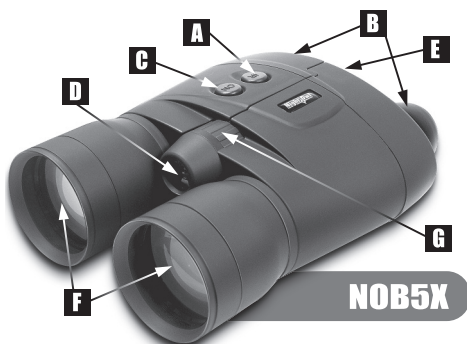
A starlite night provides the minimal amount of ambient light to allow viewing unassisted by the IR. Without the IR illuminated, a man-sized object can be recognized about 200 yards away. The IR will greatly improve target recognition.

Urban Environment (with man-made light sources)

Streetlights and headlights will generally not damage the Electronic Intensifier Tube, if a safe distance away. As a precaution, do not point the device directly into a light source. At a distance of more than 30 yards, most common man-made light sources will generally not damage the device.

MODEL FEATURES

- A** Infrared Illuminator Control
- B** Eyepieces
- C** Power Control
- D** Infrared Illuminator
- E** Battery Compartment
- F** Objective Lenses
- G** Focus Adjustment Knob



Troubleshooting

Unit may require several seconds after power-on for image to appear. This is normal.

Focus Problems

Try in lighted environment with lens caps on.

Are you able to focus the eyepieces?

- YES - Use in dark with lens caps off but do not rotate eyepieces after they have been adjusted to our eyesight.
- NO - Call our Customer Service Line

NOTE: Model # NONB2FF does not focus on objects closer than 17 feet

Unit does not turn on.

Indicator lights do not illuminate when button is pressed.

- Check to see if batteries are installed correctly
- If indicator lights illuminate but no image appears, the intensifier tube may be damaged

Image is too dark

- Use the Infrared (IR) Illuminator
- Take off the lens caps

Projected image is dim.

- Batteries are low – insert new batteries

Warning:

When the power is turned OFF, the image will not immediately disappear. It will remain visible for up to several minutes as the tube discharges. The discharge (fading of image) will be faster in higher light environments, slower in the dark.

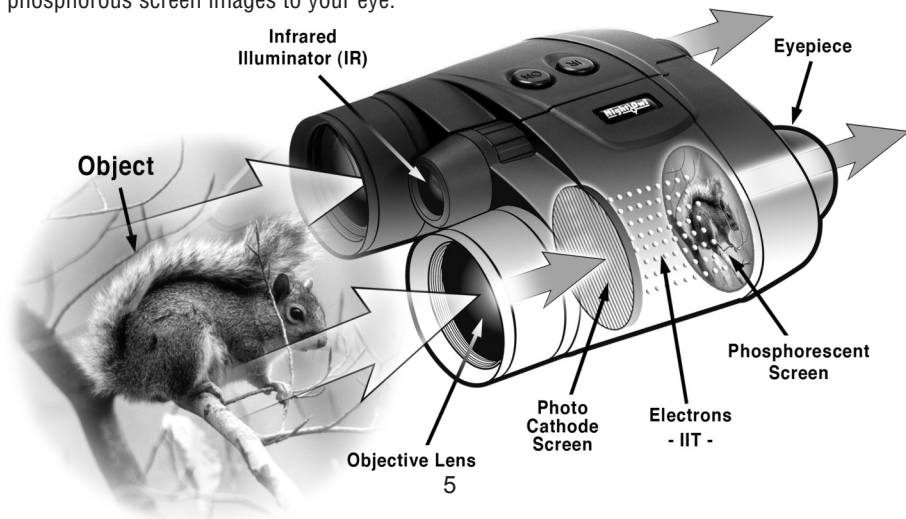
How Night Vision Works

Light coming into the device from the direction of the object is gathered by the objective lens and focused onto the Image Intensifier Tubes.

The front of the Image Intensifier Tubes contain a photocathode which converts light into electrons.

The device contains a very high voltage power supply, which converts the 3 volts supplied by the batteries into 17 kilovolts.

The high voltage hurls the electrons into the phosphorous screens. The phosphorous screens illuminate with an image when struck by electrons. The eyepiece optic then focuses the phosphorous screen images to your eye.



How to Care for your Night Vision Device

If you intend to store your unit for more than 24 hours, it is best to remove the batteries.

Keep the unit in a cool, dry place.

Clean lenses the same way you would your camera, with professional lens cleaning supplies.

The lenses are optically coated and may be scratched if abrasive material is used or if dirt is rubbed into the glass. Do not touch lens surface with fingers.

Do not drop or expose to shock. The Intensifier Tube is made of glass.

Do not disassemble or attempt to service the device. The power supply generates 17,000 volts inside!

If your device needs repair, please refer to your warranty card.

Do not leave inside car on a hot, sunny day.

Clean exterior with a soft, clean cloth.

If condensation is visible on the unit, return it to a normal temperature and wait until the condensation disappears before using.

Product Specifications



	NONB2FF Fixed Focus	NOB3X Central Focus	NOB5X Central Focus
GENERATION	1	1	1
MAGNIFICATION	2xFF	3x	5x
POWER SUPPLY (not included)	1: CR-123 3V Lithium	1: CR-123 3V Lithium	1: CR-123 3V Lithium
WEIGHT (without battery)	21.9 oz. 620.9 g	29.9 oz. 847.7 g	38 oz. 1077.3 g
DIMENSIONS	5.85x5.85x2.50 in 148.6x148.6x63.5 mm	6.65x5.85x2.70 in 168.9x148.6x68.6 mm	8.00x5.85x2.60 in 203.2x148.6x66 mm
OBJECTIVE LENS			
LENS DIAMETER	24 mm	42 mm	50 mm
ANGULAR FIELD OF VIEW	30°	19°	15°
FOV@200 ft / 60.96m	107 ft. 32.6 m	67 ft. 20.4 m	53 ft. 16.1 m
MINIMUM FOCUS RANGE	16.5 ft	6.6 ft	6.6 ft

Frequently Asked Questions

Why are the projected images always green using Night Vision technology?

The human eye resolves detail best at the wavelength of green light.

How should I care for my Night Vision device?

Do not operate in lighted conditions; device is for use in the dark.

Do not drop the device. The internal intensifier tube is made of glass and is sensitive to impact.

Why do you focus both the front (Objective lens) and Eyepiece (Ocular Lens)?

You do not see through the Night Vision device, like a day binocular. Rather you see the phosphor screen on the back of the tube. The objective lens focuses the image on to the front of the intensifier tube. That image is then converted into electrons. The electrons strike the phosphorous screen converting electrical energy into a visible image. The eyepiece focuses your vision on to the image on the phosphorous screen.

What is the effective range of Night Vision?

The maximum viewing distance depends on the environmental conditions and the size of the object being viewed. Overcast conditions, fog or rain will reduce the effective distance you can see. The Infrared Illuminator will increase viewing range, especially in areas of complete darkness where there is no ambient light.

What is the maximum effective distance of the Infrared Illuminator?

75 to 125 yds. The farther the object, the less intense the infrared light will be on the target.

Are Night Vision devices safe?

Night Vision products include shield-encased image intensifiers. The infrared illuminator utilizes light emitting diodes (LED's) operating in the near-infrared range and will not harm your eyes like a laser.

CAUTION: Do not point Infrared Emitter directly into eye at close range.

The infrared Emitter emits a BRIGHT, although invisible, beam of light. As with any bright light, do not point into the eye.

Recognize that the image produced on the phosphorous screen can be very bright. Staring into a very bright light causes the pupil to constrict. Your eye needs time to adjust to ambient light.

When can I expose the unit to light?

*For demonstration purposes there is a pinhole in the lens cap, which enables you to power on the unit in a lighted environment. The lens cap can be taken off during daylight, **but the unit has to be powered off.***

What is Generation 1? How does it differ from other Generations of Night Vision devices?

Generation 1, 2, 3 and 4 all employ electron bombardment technology. All of these technologies convert light into electrons and reproduce the image on a phosphorous screen. Generation 1 produces a higher resolution image than Generation 2.

Generation 3 and 4 are used by the United States Military and are very expensive.

Generation 2, 3 and 4 use a fiber optic device and/or special chemicals to further amplify light.

CUSTOMER SERVICE

If you have any questions or problems with your device, you may visit our website at www.nightowloptics.com where you will find answers to the most frequently asked questions.

If you experience any problems with your device, or if your device is in need of service, please call our customer support number 1.800.444.5994. The hours of operation are 8:00 a.m.-5:00 p.m. MST, Monday to Friday.

LIMITED ONE YEAR WARRANTY

Congratulations on the purchase of your new Night Vision device. Night Owl Optics® warrants this product to be free of defects in materials and workmanship when used in accordance with the accompanying owner's manual. Warrantor's obligation under this Warranty shall be limited to the original purchaser to repair or replace, free of charge, within the specified period of Warranty. This Warranty is not transferable.

This Warranty does not apply to any Night Vision products that have been subject to indirect damage due to misuse, abuse, accident, and alteration due to the attempt to repair a unit by a non-authorized repair agent. This Warranty does not cover damage to the intensifier tube from use in the daytime or in a lighted area.

During the Warranty period, Warrantor and/or any of its affiliates or authorized repair agents will, at their discretion, repair or replace defective parts in the warranted products free of charge.

Proof of purchase is required to make a claim under this warranty.

PROCEDURE FOR WARRANTY CLAIM

Please contact a Night Vision Customer Service Representative by mail or telephone for return authorization.

If you return your device for service, please include the original carrying case, manual, adapters and carrying straps. Also, please pack the unit with enough protective material so it does not get damaged or scratched during shipment. Please include your name, shipping address and telephone number, along with proof of purchase and a brief note describing the defect. The unit will be repaired or replaced at the discretion of the Warrantor. In the event the repairs are not covered by this Warranty, an estimate will be sent for your approval.

NOTE TO CUSTOMERS OUTSIDE THE U.S.A.

This warranty may vary in other countries; check with your distributor for details.
Warranty does not cover shipping costs

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