# Model: TR-IR-LRF NV201

## Features:

. Lightweight and compact design
. In a completely dark environment, the farthest observation distance can reach 300 meters
. Built-in Wi-Fi for downloading and sharing files on android or ios Smartphones or tablets
. 1024x768 high-resolution display provides clear, rich and vivid color images
. Powered by one 18650 3.7V Li-ion battery for long continuous operation
. 2-5x image magnification, flexible selection according to distance
. Built-in IR-CUT two-color filter to restore the real image of day and night
. With infrared laser ranging function, the longest distance can reach 700m
. Built-in high-brightness, low-power dimmable infrared IR LED lights, which can clearly restore the subject in the dark scene
. The infrared lens is not easy to react with metal oxides, acidic substances, air and water, and has good light transmission performance

## Overview

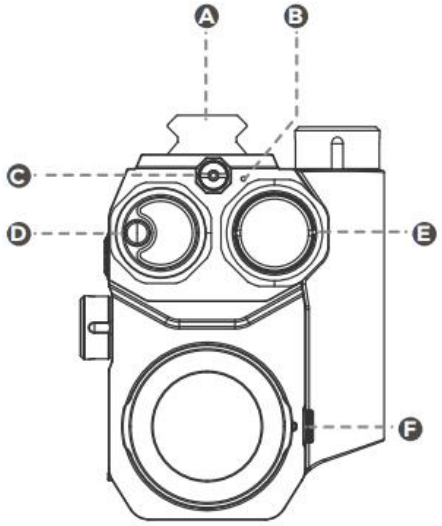
TR-IR-LRF NV201 adopts low illumination at night, Sony dynamic CMOS sensor, external infrared LED auxiliary lighting, you can obtain excellent observation results both day and night. The novel structure patent design greatly improves the observation effect and observation experience, and the built-in infrared color filter greatly improves the observation effect of the equipment during the day, reduces the overexposure under natural light during the day, and restores more realistically. TR-IR-LRF NV201/201Pro integrates the laser ranging finder to accurately grasp the target distance while observing or shooting and the ranging distance can reach 700m.

TR-IR-LRF NV201 strengthens the waterproof design and reaches the protection level of IP67. Using a single built-in rechargeable battery with a low power consumption design, the continuous working time can reach more than 5 hours, meeting the requirement of using without changing the battery all night. In addition, it has advanced fast start-up performance, fast imaging in 3 seconds after booting, which significantly improving the user's quick response ability. The high refresh rate design enables the operators to observe fast-moving targets effectively. At the same time, Equipped with high-quality and high-performance objective lens, making it ensures safety and reliability without fear of strong light. When installed on a tripod for long-distance night observation, the night observation distance can reach 300 meters, and it can be connected to cameras, video cameras, and wireless image transmission equipment. At the same time, it integrates the ranging function, and realizes the accurate grasp of the target distance while observing.

TR-IR-LRF NV201 is a clip-on model, that uses a adapter to fixed with rifle scope, equipped with a detachable 905nm infrared rangefinder module, ensuring accurate testing of the target distance. The built-in WIFI module allows users to record and share videos, and comes with a Type-C interface for external power supply and data copying at the same time. With support for video recording and exporting, It is mainly used in outdoor night shooting, hunting, outdoor adventure, search and rescue, and it can be clipped on sniper scope to complete night hunting.

## Interfaces

**Front View**




A. Pica-tinning rails, used for the installation of infrared flashlights;

B. Photosensitive sensor, detects the brightness of external ambient light, and automatically switches to night vision mode;

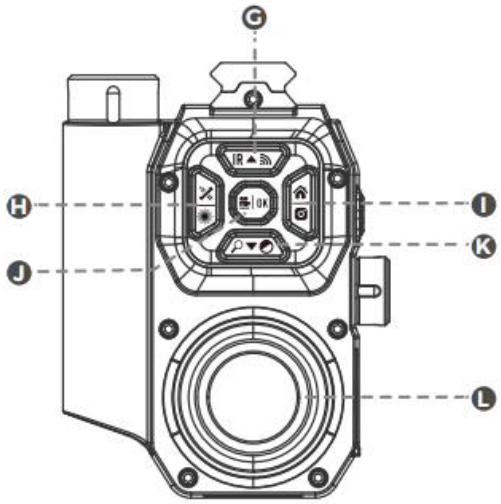
C. Laser red dot for fast positioning of targets at close range;

D. Laser range finder, used to measure the distance from the target;

E. Infrared fill light for observation at night to make the image clearer;

F. Latch, which is used to insert socket holes and reinforce the connection between the adapter and the TR-IR-LRF NV201

**Back View**




G. Upward select/ IR fill light/WIFI switch;

H. Ranging button, ranging function switch/laser red dot switch/Leftward adjustment of zeroing;

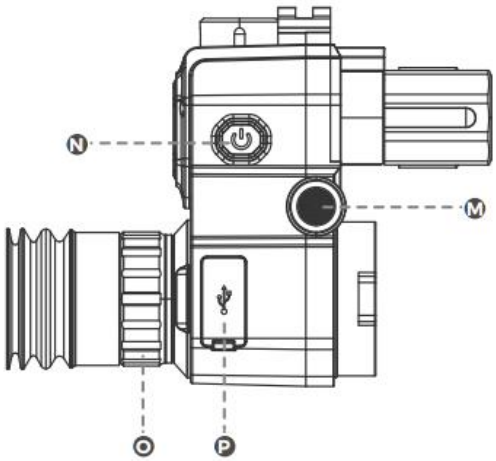
I. Menu/ Photo/Rightward adjustment of zeroing;

J. OK Button/Video;

K. Downward select/Zoom (+)/Zoom (-)/Black and white /color mode switch;

L. Eyepiece lens.

**Left View**




A. Objective lens focusing adjustment ring;

B. Power button, power on/off the device;

C. Eyepiece lens focusing rotation ring;

D. TF card slot / HDMI high-definition interface/ Type-C charging interface

## Working principle

The TR-IR-LRF NV201digital night vision device collects external light through the objective lens, and then converts the optical signal into electrical signal through the digital CMOS sensor module. This signal is then transmitted to the CPU chipset for processing in the format of MIPI signals. Finally, the electrical signal is transmitted to the OLED screen, allowing users to view the image on the OLED screen on the eyepiece.
The TR-IR-LRF NV201 digital night vision device features a powerful high brightness dimmable IR (infrared) LED that helps to image object clearly and display on the OLED screen in low light and total darkness scenery. The OLED display screen has high resolution and adjustable brightness. The image display adopts digital zoom, allowing users to magnify the displayed image by 2x, 3x, and 4x (optional).

The infrared laser ranging module emits a very thin laser beam toward the target during operation, and the photoelectric element receives the laser beam reflected by the target. The timer measures the time from the launch to the reception of the laser beam, and calculates the distance from the observer to the target. Finally, it is displayed on the OLED screen.

## Installation Instructions

**Battery Installation**

Please use one 3.7V 18650 Li-ion battery. Remove battery compartment cap and make sure setting the positive polar towards to the direction inward. Put the cap back and screw it until tight.

**Adjustments**

After the battery is installed, firstly adjust the eyepiece diopter, rotate the night vision device eyepiece diopter adjustment ring until the four-corner text icon on the screen is clearly displayed (no need to see the image clearly), and then adjust the night vision device objective lens focusing ring until the target is clearly seen; If it is used together with an optical telescope, it is necessary to install a connection adapter and fix it behind the optical telescope. The focusing ring of the objective lens of the night vision device can be rotated until the reticle of the optical telescope is clearly seen, and then the basic adjustment is completed.

**Connection Adapter**

Connect the night vision device to the adapter. When the adapter is inserted into the groove of the night vision device, the adapter and the night vision device can be fixed with the hexagon socket head screw.

**Sniper Scope Installation**

Insert the optical telescope eyepiece until the bottom, and observe the gap between the adapter and the optical telescope eyepiece. It is recommended that the gap between the adapter and the eyepiece of the optical telescope be less than 0.1mm, and the adapter is suitable for eyepieces with a diameter of ≤45mm. If the gap is insufficient, Fill gaps with the supplied plastic gasket. By adjusting the focusing wheel of the night vision device objective lens, you can see the reticle of the optical telescope, turn the night vision device to make the reticle of the optical telescope horizontal, and finally fix the ferrule with the hexagon socket.

## Quick Start Guide

Package Contents

1. TR-IR-LRF NV201: 1pc
2. USB Type-C data & power cable: 1pc
3. Connection adapter: 1pc
4. User Manual: 1pc
5. Warranty Card: 1pc
6. Battery Charging Stand: 1pc
7. Simplified Operation Guide: 1pc
8. screwdriver: 1pc
9. Rubber shims
   Thickness:
   1mm (44mm~47mm) : 1pc
   1.5mm (43.5mm~46.5mm) : 1pc
   2mm (42mm~44mm) : 1pc
   2.5mm (41.5mm~43.5mm) : 1pc
   3mm (40mm~42mm) : 1pc
10: Seals
   For adapter: 2pcs
   For battery cover: 1pc

**(1) Turn On/Off**

Long press "⏻" button (≥1s) to turn on/off, and the power indicator is on.

**(2) Eyepiece Lens Focusing**

Eyepiece lens focusing, also known as diopter adjustment, aims to enable users with different eyesight to clearly see the text icons on the screen. Turn the eyepiece lens focusing ring until the on-screen icon is clearly visible. Note: just make sure that you can see clearly the icons on the screen, not the image inside the screen. If the objective lens is not properly adjusted, the image may be not clear. The same person only needs to adjust one eye once.

**3) Objective Lens Focusing**

Before focusing the objective lens, please confirm whether the eyepiece lens focusing (diopter) has been completed, aim at the target you want to see, adjust the focusing ring of the objective lens so that the target image can be clearly seen.

**(4) Fill Light Adjustment**

In black and white mode, you can adjust the level of the fill light by pressing the "  " button once, (set IR1-3 and close), and adjust the focusing fill light by rotating and stretching the cover of the fill light.

## Technical Specifications

| Model | | TR-IR-LRF NV201 |
|---|---|---|
| Product Name | | Digital Day & Night Vision Scope |
| Power Supply | Power Supply Mode | One 3.7V Li-ion battery |
| | Voltage Range | 3.5-4.2V |
| | Power Consumption | 1W(IR is not turned on) |
| | Working Time with Battery | ≤8h |
| Objective Lens Parameters | Magnification | 2x |
| | Pixel | 5M |
| | Focal Length | 16mm (fixed focus), manual focus |
| | Objective Lens Size | Φ16 |
| | Field of View | 23.6°×21° |
| Eyepiece Lens Parameters | Entrance Pupil Diameter | 6mm |
| | Magnification Power | 18x |
| | Exit Pupil Distance | 35 mm |
| | Operation Control | Manual focus |
| | Focusing Angle Range | -600~600 |
| System Parameters | Sensor Resolution | 1080P (1920×1080) |
| | Internal RAM | 2Gb |
| | Measurement Range | 3~700m |
| | Video Resolution | 1920x1080@60fps |
| | Image Format | JPG |
| | Display Resolution | 1024x768 |
| | Display Size | OLED0.39" |
| | WIFI | 802.11b/g/n |
| | Storage Type | TF Card（Support 4G~128G） |
| | Infrared Power/Wavelength | 2W/3W/5W three gears, 850nm/940nm |
| | Geomagnetism | 3-axis Gyroscope |
| | Cross Division Line | Six Types |
| | Picture-in-Picture Enhanced Magnification | Support |
| | Video Transmission | HDMI/WIFI |
| | TYPE.C Interface | Battery Charge and Data Transfer |
| | Language | Chinese / English / Spanish / Portuguese / French / German / Italian / Ukrainian / Turkish / Russian |
| Connection Adapter | Size | ≥45mm |
| Reliability | Mean Time Between Failures | ＞50000h |
| Mechanical Properties | Dimensions (L*W*H) | 143*82*113（mm） |
| | Housing | Plastic & aluminium alloy |
| | Body Color | Black |
| | Net Weight | ≈360g |
| Working Environment | Operating Temperature | -20℃~50℃ |
| | Storage Temperature | -30℃~75℃ |

## Applications

. Outdoor night vision, observe animals

. Hunting, outdoor adventure, search and rescue

. Use with gun sniper scope for night hunting