How Does Digital Night Vision Work?

Bushnell Digital Night Vision products collect existing light through the objective lens, which is then processed through a highly sensitive image sensor and electronics and then transferred to a micro-display.

CMOS: Chips create images of objects by converting light into electrons. Micro-Display: A type of LCD flat-panel display screen in which each pixel is controlled by one to four transistors. The micro-display technology provides the best resolution of all the flat-panel techniques.

Steathview:™ Digital Night Vision utilizes CMOS technology, providing superb image resolution comparable to Gen 2. Images are displayed on a black-and-white display. Contains a video output port, which allows transmission of digital video images to video camcorders, computer laptops/monitors and/or television screens.

Infrared Diodes: The StealthView contains two infrared diodes for illumination of objects in complete darkness where no ambient light source, such as moonlight, is available. One is on at all times, whereas the IR spotlight can be turned on and off. The spotlight enables viewing of objects at 200-foot ranges

Image-Intensified Night Vision

An optical device comprised of high-quality image-intensifier tubes and optics that amplify existing light to allow you to see in conditions too dark for the naked eye.

How Does It Work?

- Available light (energy) is collected by the objective lens and focused on the image intensifier.
- Inside the intensifier a photocathode is “excited” by the light and converts the energy into electrons.
- The electrons accelerate across an electrostatic field inside the intensifier and strike a phosphor screen (like a monochrome TV screen), which emits an image that you can see. This acceleration of electrons provides gain and enhances the image.

Types of Bushnell® Night Vision

Generation 1: Does not require an active infrared light source. Instead it amplifies available ambient light.

Night Vision Monocular: A Night Vision device for use with one eye.

Night Vision Binocular: Two complete sets of optics and image intensifiers that are connected and share a common power supply.

Angle or Field-of-View

The measure of the angle defining the field visible through the Night Vision system at a distance of 100 yards.

Eyepiece Focus

Used to match your Night Vision scope or binocular to your specific eyesight.

Image Intensifier or Intensifier Tube

The active component in a Night Vision system that amplifies light and presents a usable image.

Infrared (IR) Illuminator

Provides a light source for the system to amplify, yielding enhanced images in very low-light conditions such as caves, where no ambient light is available for amplification.

Built-In Dual-Beam Infrared Illuminators

Allows you to adjust the IR from low to high power according to your needs – high beam for long range illumination, and low beam for wide-angle illumination.

Objective Lens

Collects all available light and focuses it on the image intensifier. It also provides image magnification. The best objective lenses have low magnification (5x or less), are high-speed (f2 or faster) and are coated for maximum efficiency in the near-infrared bandwidth.

Phosphor Screen

Positioned at the back of the intensifier tube, the green phosphor screen renders a visible Night Vision image. The human eye is most sensitive to green contrasts.

Photocathode

Converts light (photon energy) into electrons (electrical energy), which are then amplified in the intensifier. The objective lens focuses available light on the photo-electric surface of the photocathode, which is excited and passes electrons within the tube.

Resolution

A measure of the ability to render and display a detailed image. Imageintensifier resolution remains constant and is expressed as the maximum number of line pairs per millimeter (lp/mm) that can be discerned when a black-and-white stripe pattern is focused on the photocathode.