

Orion® Monocular Instructions

WARNING: Never look directly at the Sun through your monocular without professionally made solar filters, even for an instant, or permanent eye damage could result. Young children should use these monoculars on sunny days only with adult supervision.

Introduction to Monoculars

Monoculars are really just small diameter, very compact telescopes. If you have used a telescope or a binocular (two small telescopes mounted side-by-side), you'll get comfortable using a small monocular quickly. Hand held monoculars excel in situations where you need to save space and weight – such as when hiking or traveling through rough country for birding. Small diameter monoculars, those under about 25mm (1-inch), are usually small enough to fit in a pocket, so they are great for traveling.

Monocular Terminology

Objective Lens – This is the larger, light gathering front lens of the monocular that should point toward the direction you want to view.

Eyepiece or Ocular – This is the smaller lens on the end of the monocular that you place near your eye to view through the monocular.

Eyecup – The eyepiece end of a monocular will usually have a softer rubber “bumper” that serves to cushion the area around your eye for comfortable use.

Focus Wheel, Focus Ring or Focus Knob – Your monocular will have an area that when twisted or adjusted allows you to sharpen the image or “focus” the object you want to view.

10x25 or 10x42 (examples) – These are examples of how a monocular is designated. The first number is the power or magnification – how many times bigger and object will look through a monocular. The second number is the size of the objective lens, measured in millimeters. Thus, 10x25 and 10x42 monoculars both make an object 10 times bigger, but, the monocular with a larger objective lens of 42mm actually collects more light (~280 percent more light), so it gives a brighter image.

Field-of-View – This is a measure of the “width” of the image or how much space/area your monocular allows you to see through the eyepiece at any given distance, and is often printed on the monocular. It can be referred to as an angular measurement in degrees (example 5.0 degrees) or as a linear measurement such as 50m/1000m – where an object 50 meters wide at 1000 meters distance will just fit in the field of view.

Near Focus – The closest distance a monocular can focus.

Using a Monocular

A monocular is similar to a point-and-shoot camera, to use a monocular you simply point the objective end at what you want to view and look in the eyepiece for a magnified view! You still need to focus a monocular and you'll find that most models will have a focus ring near the eyepiece end (twist the barrel to focus); however, depending on the design of the monocular, the area you twist to focus may be located near the larger objective end of the monocular for ease of use.

Most monoculars have a fairly large range of focus – you will be able to focus on very distant objects as well as objects that are very close (“near focus”). Try moving the focus ring to one end of its travel while you are looking at closer objects and see how close you can focus; note that it may take quite a bit of turning the focus ring to go from far distance to a much closer object.

For really small monoculars, it is sometimes hard at first glance to tell which end is the eyepiece end! The objective lens is the larger lens of the monocular; and the eyepiece usually has a fold-down or roll-down eyecup.

When using monoculars, those models with a bigger objective lens will always make an object brighter than a monocular which has the same power, but a smaller objective lens. However, larger objective monoculars will be physically larger as well – you trade image brightness for compactness and weight with a larger monocular.

Cleaning and Care of Monoculars

The lens surfaces of Orion monoculars are coated with anti-reflection coatings that can be damaged with careless handling. Avoid touching surfaces with fingers or any coarse material.

Most monoculars, eyepieces, and camera lenses are cared for in a similar manner. All optics, even if stored, must be cleaned approximately twice a year or whenever they are dirty. The dust that builds up on coatings promotes mold growth, which etches glass and destroys optical coatings. Avoid over-cleaning; it can damage the coatings. Always use lens cleaning tissue and fluid that are specifically designed for multi-coated lenses. Do not use fluids or tissue that are for eyeglass or household use.

To clean the monoculars, blow off the lens with a blower bulb to remove the larger particles. Make sure your hands are clean. Have several pieces of tissue ready. Put two drops of lens cleaning fluid on a piece of lens cleaning tissue (never directly on the lens). Gently wipe the dirt off the lens. Quickly wipe the excess with a new, dry piece of lens cleaning tissue. On larger lenses, clean only a small area at a time, using new tissue each time. On excessively dirty lenses, wipe across using one stroke for each tissue, alternating wet and dry. The more fresh, clean lens tissue you use, the less likely you are to scratch your lenses. Always avoid excessive pressure or rubbing. It is better to leave a tiny amount of dirt on the lens than to use too much pressure and destroy the lens coatings.



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Storage and Cold Weather

All optics, when exposed to excessive temperature changes or high humidity, have the potential to fog up. Always allow the optics to slowly adjust to cold weather by storing the instrument (in its case) in a cold area such as an unheated garage or the trunk of a car for a few hours before use. When bringing the instrument back inside a warm house, store it in a cool area for one to two hours. It is very important to then open up the case, remove the instrument, then remove the caps, and let everything dry out overnight. The instrument should be stored in a cool dry place; storing it in a moist environment will result in mold growth and destroy the optics. This is not covered by warranty.

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or Evening**

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One-Year Limited Warranty

All Orion binoculars and monoculars are warranted to be free of defects in materials and workmanship for at least one year. It specifically does not cover abuse, modification, mishandling, self-repair, or normal wear and tear.

This warranty does not apply if, in Orion's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. For further warranty service information, contact: Customer Service Department, Orion Telescopes & Binoculars, 89 Hangar Way, Watsonville, CA 95076; (800) 676-1343.