

Orion® Illuminated Reticle Eyepieces

#8450 12.5 Plössl
#8496 5mm Ultrascopic



An Orion Illuminated Reticle Eyepiece is useful for a variety of different applications in amateur astronomy. By virtue of its LED-lit crosshair reticle pattern, the illuminated reticle eyepiece aids in polar alignment of a telescope on an equatorial mount and in alignment of a telescope's finder scope. It also allows precision guiding during long-exposure astrophotography when used with an off-axis guider or as the eyepiece in a guide scope.

All Orion illuminated reticle eyepieces feature a double cross-line reticle etched in optical glass (Figure 1). The double line arrangement allows convenient and precise positioning of a star image either in the tiny central square formed by the lines or on the intersection of any two of the lines.

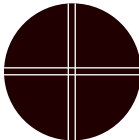


Figure 1

Attaching the Illuminator

All models come with a wireless illuminator. To attach the illuminator to the eyepiece, simply thread the LED end into the threaded hole in the side of the eyepiece. Turn on the illuminator by rotating the knurled knob on the exposed end of the illuminator. Brightness is also controlled by the knurled knob. Be sure to turn the illuminator off when it is not in use, otherwise the batteries will drain unnecessarily.

Yes, It's Dim!

Your first look through the eyepiece is likely to be in the daytime, and you might not be able to see the illumination of the double crosslines. When your eyes are dark-adapted, however, the illumination will be obvious. You should be able to see the LED itself light up even in the daytime when the illuminator is not coupled to the eyepiece.

When using an illuminated reticle eyepiece in the field, the illumination should be set as dim as possible so faint stars in the field of view will not be "washed out" in the crosshairs' glare. In some cases, you may find the illumination is too bright even at

the dimmest setting. To diminish the brightness even further, try wadding up a tiny bit of paper and placing it between the eyepiece and the illuminator. While this may sound odd, it is a technique that has been employed by astrophotographers for many decades!

Focusing the Eyepiece

The knurled top of the eyepiece allows focusing of the double-crossline reticle to your eyesight. Proper focusing of the reticle is important. If it is not in focus, you may experience "parallax" errors in which the crosslines may appear to shift with respect to the sky background.

It's a good idea to focus the reticle with the main telescope capped or purposely set out of focus. Then, when the crosslines appear sharp, remove the cap from the telescope and look into the eyepiece. Aim at a star and focus the star image using the telescope's focuser. Now, both the main telescope and the reticle itself should be in sharp focus in eyepiece's field of view.

Replacing or Installing Batteries

The illuminator for the #8450 takes three SR54 batteries. These are common watch-type batteries that are widely available. The batteries are installed inside the illuminator arm. To replace the batteries, refer to Figure 2. Note that the positive (+) side of the batteries should face the LED end of the illuminator.

The illuminator for the #8496 takes two SR44 batteries. These are common watch-type batteries that are widely available. The batteries are installed inside the illuminator arm. To replace the batteries, refer to Figure 3. Note that the negative (-) side of the batteries should face the LED end of the illuminator.

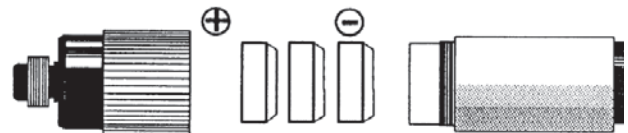


Figure 2



Figure 3

Care and Cleaning of the Eyepiece

Store your illuminated reticle eyepiece in a clean, dry, dust-free place. If dust builds up on the eye lens, simply blow it off with a blower bulb or lightly brush it off with a soft camel-hair brush. Avoid touching optical surfaces with your fingers, as skin oil may ruin the optical coatings.

To remove fingerprints or smudges from the lens, use photographic-type lens cleaning fluid and lint-free optical lens cleaning tissue. Don't use household cleaners or eyeglass-type cleaning cloth or wipes, as they often contain undesirable additives like silicone, which don't work well on precision optics. Place a few drops of fluid on the tissue (not directly on the lens), wipe gently in a circular motion, then remove the fluid with a dry tissue or two. Do not "polish" or rub hard when cleaning the lens, as this may scratch it. The tissue may leave fibers on the lens, but they can simply be blown off with a blower bulb.

Never disassemble the eyepieces to clean optical surfaces!

Specifications

#8450

Focal length:	12.5mm
Eyepiece design:	Plossl
Apparent field of view:	40°
Lens coatings:	Fully multi-coated
Eye relief:	11mm
Barrel:	Fits 1.25" eyepiece holders, threaded for Orion filters
Reticle:	Etched, double crosshair, helical-focusing
Illuminator:	Red LED, used 3x SR54 batteries

#8496

Focal length:	5.0mm
Eyepiece design:	Ultrascope
Apparent field of view:	52°
Lens coatings:	Fully multi-coated
Eye relief:	6.1mm
Barrel:	Fits 1.25" eyepiece holders, threaded for Orion filters
Reticle:	Etched, double crosshair, helical- focusing
Illuminator:	Red LED, used 2x SR44 batteries

One-Year Limited Warranty

This Orion Illuminated Reticle Eyepiece is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid to: Orion Warranty Repair, 89 Hangar Way, Watsonville, CA 95076. If the product is not registered, proof of purchase (such as a copy of the original invoice) is required.

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.

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89 Hangar Way, Watsonville, CA 95076

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