



32 mm Guide Scope

User's Manual



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WARNING: Never look directly at the Sun with the naked eye or with this optic. Never point this optic at the Sun. Permanent irreversible eye damage and/or damage to equipment can result.

Overview

The Apertura 32 mm Guide Scope uses a high quality cemented doublet refractor objective with a 121 mm focal length. This main objective offers good color correction, a bright image, and sharp high contrast views. When combined with an appropriate guide camera the fast f/3.78 optic offers a plethora of stars to guide from.

Specifications

General Specifications

- Aperture: 32 mm
- Focal Length: 121 mm
- Focusing: Objective Mounted Helical Focuser
- Material: Aluminum
- Assembled Weight: 8oz
- Attachment: Standard "Synta Style" Finder Base

Using The Finderscope

Parts of the Finderscope

1. Guide Scope Assembly
 - a. Objective / Dew Shield
 - b. Focus Locking Ring
 - c. Center Tube
 - d. Camera Holder
 - e. Camera Lock Ring
2. Guide Scope Rings and Mounting Bar
3. Front Objective Dust Cover
4. Guide Scope Alignment Screws
5. Rear Dust Cover



Assembling the Finderscope

The first step in assembling the finder scope is to locate the six plastic tipped Finder Scope Alignment Screws (Part #4) and thread them just a couple turns into the Finder Scope Rings (Part #2), as shown in the following image.



Next, remove the Camera Holder (Part #1d) from the Center Tube (Part #1c) by unthreading it counter clockwise.



Once the Camera Holder has been removed from the guide scope, the guide scope Center Tube can be inserted into the Finder Scope Rings and the six silver thumb screws tightened to secure the guide scope, as shown in the following image.



Next, thread the camera holder back into place on the Center Tube and tighten it in a clockwise rotation.



Focusing

The 32mm guide scope has two separate focus adjustments available. One adjustment is a gross adjustment performed by sliding the camera nosepiece in and out of the camera holder. The second adjustment is the helical focuser built into the objective of the guide scope. This rotational adjustment is used to fine tune the focus.

Once the guide scope has been assembled, you'll now be ready to connect a camera to the guide scope and set a rough focus position. In the sections below rough positions for the helical focuser and camera will be provided, which should allow you to see stars initially on your first use. It is likely that a fine focus adjustment will be necessary still. We have provided a guide for focusing both Mini Form factor cameras and Standard 12.5mm back focus uncooled guide cameras. You'll want to use a ruler or digital caliper for best results. Ideal settings are given in a metric mm measurement but additional fractional inch measurements are given, in the event that you only have access to a standard ruler or tape measure.

Please note, when adjusting fine focus at night you might find that initially there are no stars shown on the camera. Long exposure times should be used initially as these can be useful for detecting the dispersed light from a defocused star. When a star is defocused the light is spread across many hundreds of pixels rather than just 6-9 pixels like you might experience when a star is perfectly focused. When a star is very defocused it might take a 30 second exposure for the light to register on the camera sensor. As the guide scope and camera are adjusted closer to an ideal focus, the camera exposure time can be shortened. This allows for a more "Real Time" adjustment of the focus.

It is sometimes easiest to connect to the guide camera in your imaging software, rather than through the guiding software. As an example it might be easier to achieve fine focus through SharpCap rather than PHD2, as SharpCap can more easily allow for a longer exposure image and the opportunity to auto stretch the histogram, which will increase contrast of the image in SharpCap.

Mini Form Guide Camera

Make sure that the 1.25" extension that is included with your Mini Form Guide Camera is installed onto the camera. Oftentimes this is a simple black colored extension and might come preinstalled on the camera. In the following image you can see the extension in place on the camera.





Insert the camera into the camera holder of the telescope, and position the camera so that there is approximately 12 mm of space between the red body of your mini camera and the locking ring on the camera holder of the guide scope. An approximate starting point if using an inch ruler would be $\frac{1}{2}$ ". Tighten the lock ring to hold the camera in position.

Then, loosen the front objective and rotate it counter clockwise until there is about 10 mm of space between the front objective lock ring and the dew shield / objective. Rotate the objective lock ring counterclockwise until the lock ring makes contact with the objective housing / dew shield.



Standard Form Factor Camera

Make sure that the 1.25" nose piece that is included with your Guide Camera is installed onto the camera. In the following image you can see the extension in place on the camera.



Insert the camera into the camera holder of the telescope, and position the camera so that there is no space between the red body of your camera and then lock the ring on the camera holder of the guide scope.



Then, loosen the front objective and rotate it counter clockwise until there is about 11 mm ($\frac{7}{16}$ inch) of space between the front objective lock ring and the dew shield / objective. Rotate the objective lock ring counterclockwise until the lock ring makes contact with the objective housing / dew shield.

Warranty

The *Apertura Absolute Warranty* provides two years of coverage against product defects. After the initial two-year warranty expires this product qualifies for Apertura's Three-Year SHARP coverage, an accidental replacement program. In addition, the Apertura Absolute Warranty is transferable! It is important to keep your original receipt and the product's original boxes and packaging, should you need to make a claim.