



## THE SCOPE

The Apertura 60EDR is an f/6 apochromatic doublet utilizing two elements of FPL-53 glass. It has a lens diameter of 60mm, a focal length of 360mm, and weight of 3lbs and 13oz with the field flattener attached.

Focal length: 360mm

Dew shield outside diameter: 80mm

Weight of scope without field flattener: 3lbs 11oz  
(Weight includes the 2" and 2" to 1.25" eyepiece adapter.)

Weight with field flattener: 3lbs 13oz

## TUBE MEASUREMENTS



Length of the dew shield from front to back: 82mm

Outside diameter of scope behind dew shield (for dew heaters): 76mm

Minimum length for dew heater (circumference): 9.4"

### Length of optical tube

Dew shield retracted and focuser retracted (from rotator ring): 223mm

Dew shield extended and focuser extended (from rotator ring): 348mm

Dew shield retracted and focuser extended (from rotator ring): 298mm

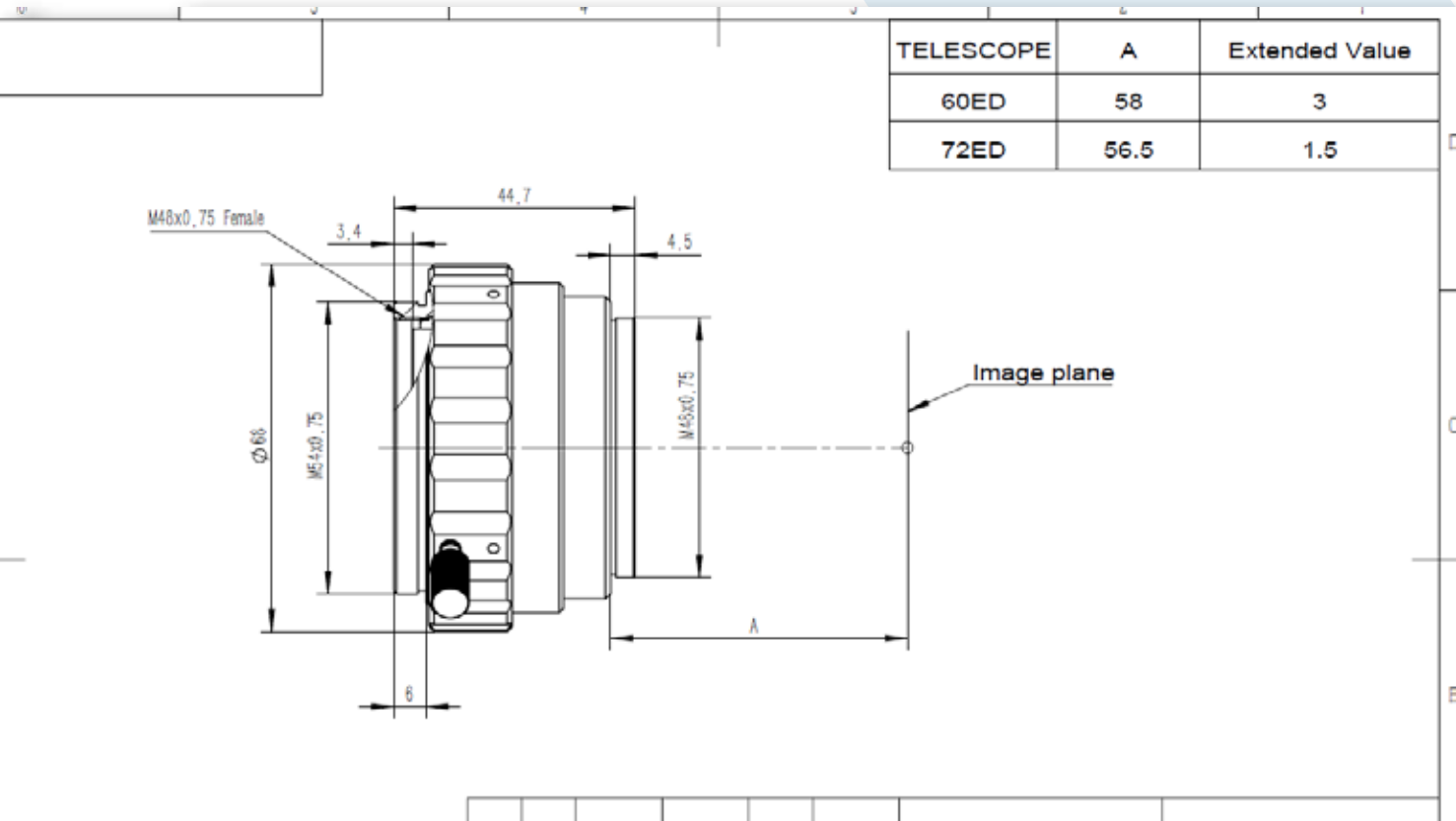
Dew shield extended and focuser retracted (from rotator ring): 273mm

# FIELD FLATTENER

The dedicated Apertura Field Flattener will allow one to achieve pinpoint stars to the edges of the field of view. This field flattener supports full frame cameras and is adjustable so that the user can achieve perfect backfocus when using a range of different cameras/accessories in their imaging train. This field flattener features m48 male threads on the camera-side, and m54 male threads on the telescope side.



- Corrected imaging circle of field flattener: Full frame
- Allows for 2" filter (see mechanical drawing)
- Field flattener backfocus requirement: 58mm (see mechanical drawing)
- The field flattener requires 58mm of backfocus. Adjust field flattener to 3mm for standard 55mm backfocus requirements.





# FOCUSER

The focuser on the Apertura 60EDR is a dual speed (10:1) focuser with a fine tune adjustment knob for precise manual focus. The focuser can be easily disassembled to accommodate the ZWO Electronic Auto Focuser as well as other motorized focusers.



## Size and thread of screws on bottom of focuser

Two silver hex screws to hold the focuser down:  
m4 x 0.7tpi

Central Phillips locking screw: m8 x 0.75tpi

Far left and far right hex screws: m4 x 0.7tpi

Hex key needed: 2mm

Recommended mounting hole to attach  
motorized focuser: m4 x 0.7tpi

Focuser mechanism: 10:1 coarse and fine  
adjustment

Thumb screw thread pitch: m4 x 0.7tpi

## Screws securing finder shoe

Screw size: m4 x 0.7tpi

Hex size for original screw: 2.5mm

Spacing between mounting holes: 20mm

## Finder shoe requirements

Synta Style finder shoe with vertical and horizontal  
mounting holes

Apertura finder shoe recommended



## Size and thread of tension knobs on top of focuser

Blue tension knob pitch: m8 x 0.75tpi

Hex tension screw: m4 x 0.7tpi

Hex key needed for tension knob: 2mm



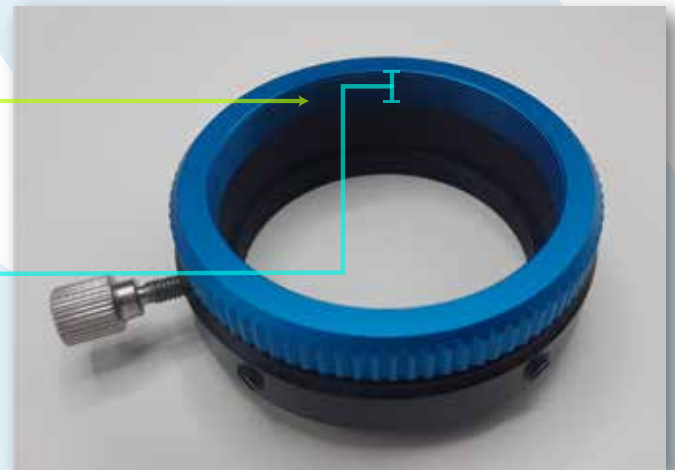
# ACCESSORIES/MISC.

The Apertura 60EDR features a ring/L-bracket for mounting both Vixen and Losmandy style dovetails. Additionally, this doublet comes with a rotator to help orient your camera so you can achieve that perfect framing on your next target. The rotator also helps when using the 2" or 2" to 1.25" eyepiece adapter with brass compression ring to adjust your diagonal for comfortable viewing.



Both 2" and 2" to 1.25" eyepiece adapters contain a brass compression ring

2" to 1.25" adapter also threaded to accept 2" filter



Thread pitch of rotator: m54 x 0.75tpi

Thread depth of rotator: 8mm



Weight of dovetail ring/ L-Bracket: 5.5oz

This ring is reversible for proper balance with shorter dovetails.

## Threads on bottom of L-bracket

Top and bottom: 1/4" - 20

Central hole: 3/8" - 16

Spacing between top and bottom 1/4-20 holes: 30mm

# HOW TO ATTACH ZWO ELECTRONIC AUTO FOCUSER



The ZWO EAF is compatible through the coarse adjustment knob.

**Step 1:** With the lens facing away from you, turn the scope over so that the bottom of the focuser is facing upwards. Remove the screw directly to the right of the coarse adjustment knob.

**Step 2:** Look down into the screw hole and rotate the coarse adjustment knob until you see another hex screw of the same size appear. Loosen but do not remove this hex screw. Turn the coarse knob slightly more as there will be another hex screw you must loosen. (Flashlight recommended.)

**Step 3:** Pull the coarse adjustment knob off.

**Step 4:** Attach the correct ZWO EAF coupler by sliding it onto the focuser shaft. Tighten down the coupler using the provided hex screws.

**Step 5:** Slide ZWO EAF gear shaft into the other end of the coupler. Tighten down the ZWO EAF gear shaft using the provided hex screws.

**Step 6:** Attach the ZWO EAF bracket to the EAF itself and then to the focuser using the hole between the central gold Phillips screw and the fine tune adjustment knob.