

ASTRO-TECH

Field Flattener and Reducer/Field Flattener Tech Sheet

ASTRO-TECH AT90CFT AND AT90EDX



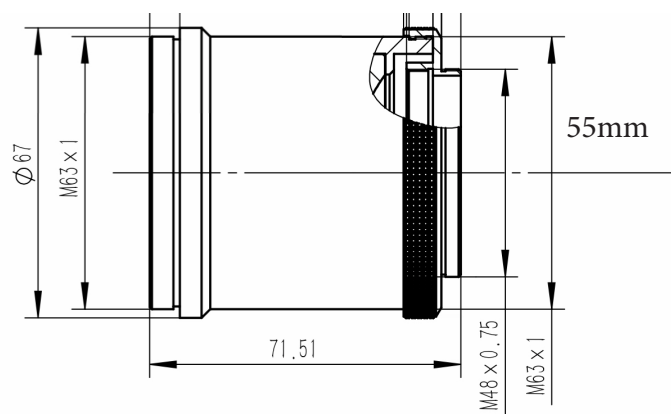
The 90CFT and 90EDX field flattener or the reducer/field flattener threads onto the camera angle adjuster that is attached to your focuser. Unthread* the 2" eyepiece/accessory holder at the end of your focuser as well as the thin knurled black ring. Then simply thread your reducer/field flattener right into your camera angle adjuster.

* The 2" eyepiece holder is held in place to the CAA by three allen screws. Both scopes were provided with the proper allen wrench to loosen these screws and unthread the adapter. It might be a bit snug after you loosen the screws, but it will unthread once it gets over the "bites" left by the screws.



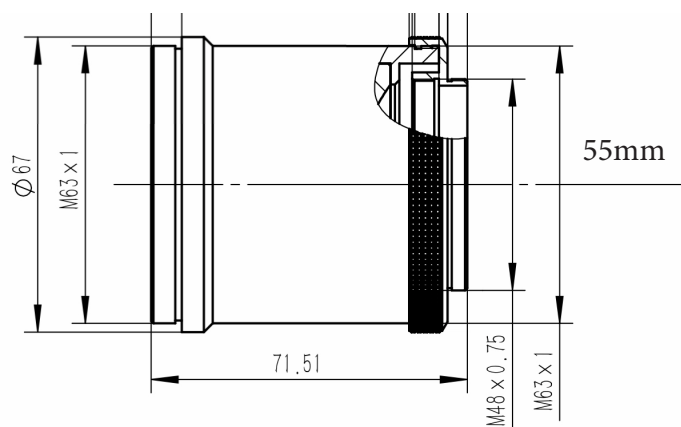
AT90CFT and AT90EDX Dedicated 0.8x Reducer/ Field Flattener

The AT90CFT/EDX reducer/field flattener is designed to shorten the focal length and speed up the f ratio. This particular model is a 0.8x reducer making your AT90CFT/EDX 432mm and f/4.8 when attached. The camera side of the adapter is 48mm t-threads. So make sure t-ring is correctly sized.



AT90CFT and AT90EDX Dedicated Field Flattener

The AT90CFT/EDX field flattener is designed to specifically to work their respective telescope. They will keep the native focal length of the instrument intact while flattening the field. The threading on the telescope side is 63mm. The camera side of the field flattener is 48mm t-threads so make sure you have the correct t-ring. Back-spacing is an industry standard 55mm.



Backspacing (also called back focus distance) for a telescope refers to the distance from the last optical surface of the telescope, or in this case, a focal reducer/field flattener to the imaging sensor. This measurement is crucial for astrophotography and ensures that the optical system delivers sharp, properly focused images.

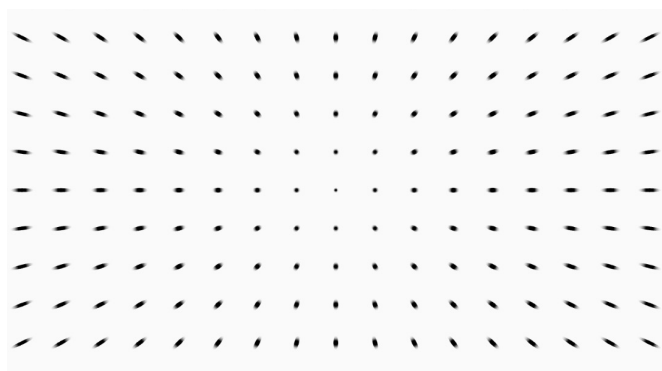
Why is Backspacing Important?

It Ensures Proper Focus – If the camera sensor is too close or too far from the optimal back focus distance, stars may appear distorted or out of focus. Field flatteners or focal reducers/field flatteners, require a precise back focus distance to achieve sharp stars across as much of the field as possible.

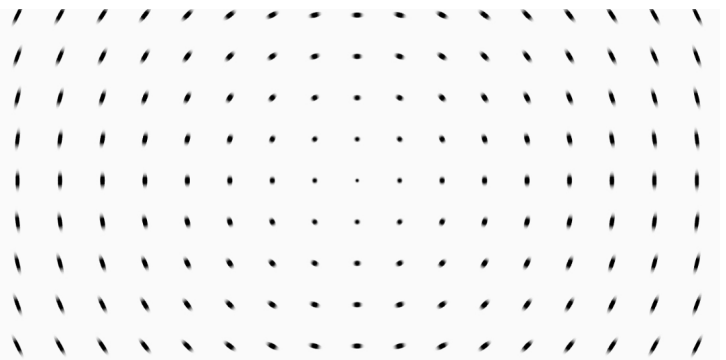
Our Backspacing Requirements:

Our flatteners or reducer/field flatteners require 55mm of back focus. Most modern imaging cameras come with the proper extensions to reach 55mm out of the box. However, if you add other components in your imaging train, like a filter wheel for example, you will have to do some math to make sure you are able to get to the proper 55mm. If using a DSLR with a T-ring, most T-rings are designed to provide a 55mm back focus when attached to the camera. Small adjustments (fractions of a millimeter) can sometimes make a significant difference in image quality. Also, falling temperatures or optical manufacturing tolerances can make minor differences in proper backspacing. So you may require 54mm of backspacing or even 57mm of backspacing. At times it can become a little extra trial and error to get it dialed in.

Common Star Patterns That Needs Some Backspacing Adjustment



If your stars are radiating out, then you need to add some spacers as your sensor is too close.



If your stars are bowing out, then you need to take some spacers out as your sensor is too far away.