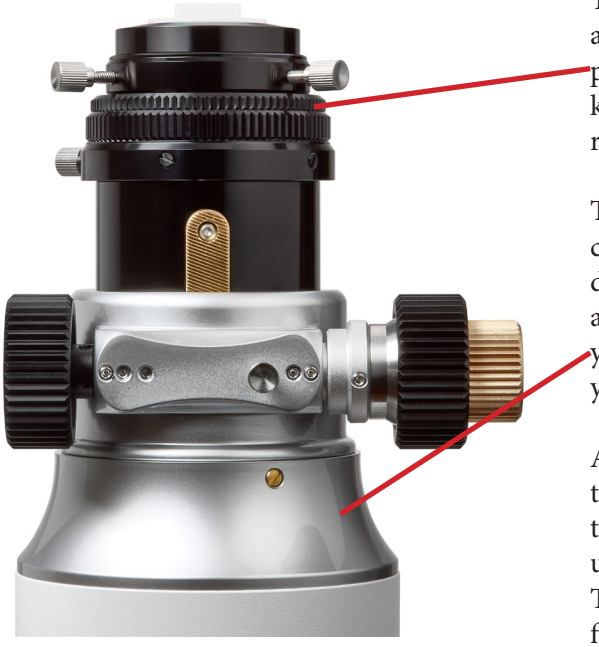
ASTRO-TECH

Field Flattener and Reducer/Field Flattener V2 Tech Sheet

ASTRO-TECH AT80EDT, AT115EDT, AT130EDT, AT152EDT



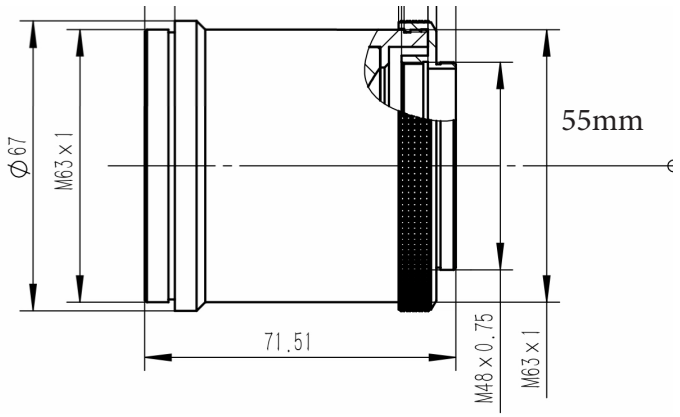
The EDT reducer/field flattener threads onto the camera angle adjuster that is attached to your focuser. Unthread the 2" eyepiece/accessory holder at the end of your focuser as well as the thin knurled black ring. Then simply thread your reducer/field flattener right into your camera angle adjuster.

There is one caveat. If your collar of your 130 is 2.1" tall, or your collar of your 115 is over 1.5" tall, or your focuser on your 80mm does not rotate you will have to take off your camera angle adjuster and attach the field flattener or reducer field/flattener directly to your focuser drawtube. If you collar meets none of the issues then you will be able to proceed as described in the first paragraph.

Also, there is a provision for attaching a 2" filter in the imaging train. The camera side of the reducer/field flattener actually unthreads from the body. On the underside of the piece that you just unthreaded is a 48mm thread that your filter can thread right on. Thread your filter on, then thread the end back on the reducer/field flattener and you are ready to go.

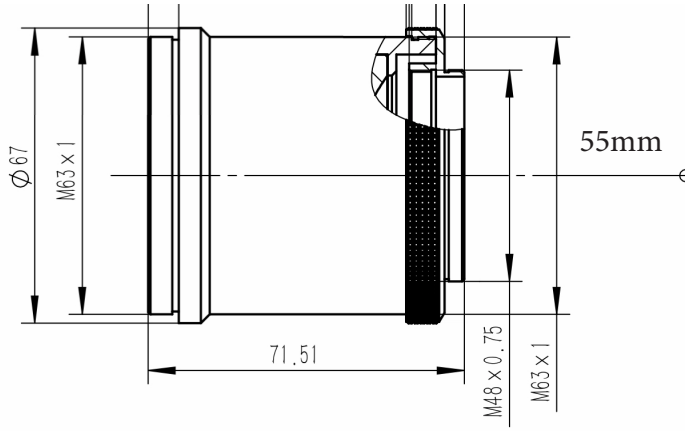
AT80EDT Dedicated 0.8x Reducer/Field Flattener

The AT80EDL 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 AT80EDT 384mm and f/4.8 when attached. The camera side of the adapter is 48mm t-threads. So make sure t-ring is correctly sized.



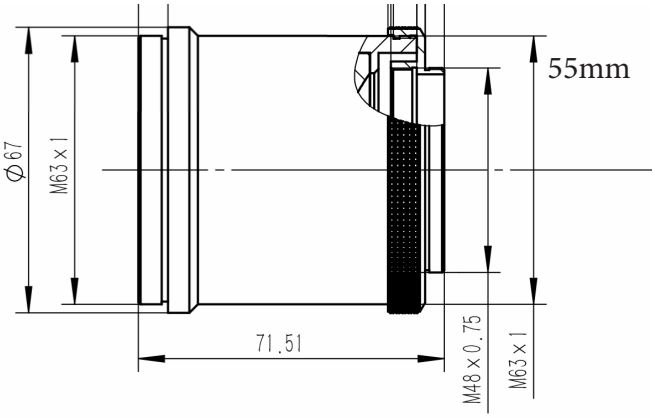
AT115EDT Dedicated 0.8x Reducer/Field Flattener

The AT115EDT 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 AT115EDT 644mm and f/5.6 when attached. The camera side of the reducer/field flattener is 48mm t-threads so make sure you have the correct t-ring.



AT130EDT Dedicated 0.8x Reducer/Field Flattener

The AT130EDT 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 AT130EDT 728mm and f/5.6 when attached. The camera side of the reducer/field flattener is 48mm t-threads so make sure you have the correct t-ring.



AT152FF for the AT152EDT

The AT152EDT 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 AT130EDT 973mm and f/6.4 when attached. The camera side of the reducer/field flattener is 48mm t-threads so make sure you have the correct t-ring.

Installation is simple. Just unthread the 2" adapter from the focuser drawtube. This will expose the 92mm threads. Now, just thread the AT152FF in its place and you are ready to go.

Field Flatteners for the AT80EDT, AT115EDT, and AT130EDT

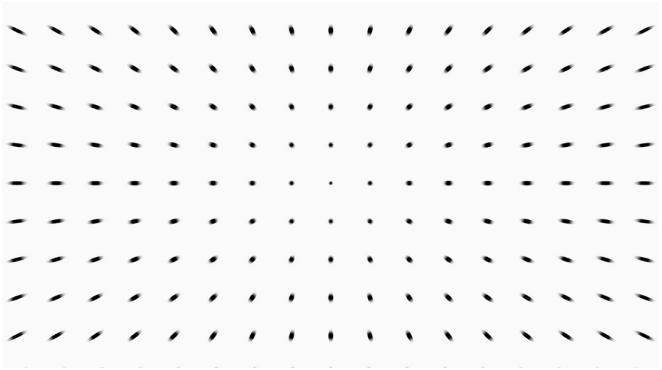
The field flatteners are designed specifically to work their respective telescope. They will keep the native focal length of the instrument intact while flattening the field. The threading on the telescope side is 63mm. The camera side of the field flattener is 48mm t-threads so make sure you have the correct t-ring. Backspacing 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.

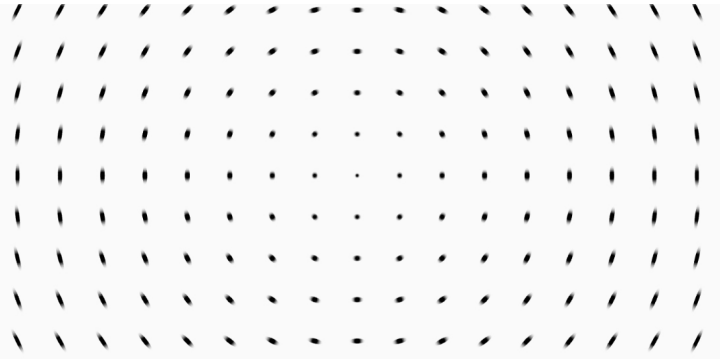
Why is Backspacing Important?
It Ensures Proper Focus – If the camera sensor is too close or too far from the optimal back focus distance, stars may appear distorted or out of focus. Field flatteners or focal reducers/field flatteners, require a precise back focus distance to achieve sharp stars across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