

Meade ACF 0.68x Focal Reducer with 50mm T-thread Adapter



Fig. 1: ACF 0.68x Focal Reducer



Fig. 2: 50mm T-thread Adapter



Fig. 4: Typical DSLR Configuration

Introduction:

The Meade 0.68x focal reducer is designed for use with Meade's Advanced Coma-Free (ACF) telescopes, of any aperture, using the 2"-24 (2" diameter, 24 threads per inch) rear cell thread. This rear cell thread is standard on all Meade ACF telescopes. The 0.68x focal reducer consists of 4 lenses in 2 groups with all air-to-glass surfaces fully multi-coated with broadband anti-reflection (BBAR) coatings for maximum light transmission and image contrast. It provides good correction across a 28mm image circle making it ideal for APS-C sized sensors.

Meade's ACF focal reducer reduces the effective focal length of the main telescopes optical system by a factor of about one third. When used with Meade's f/10 ACF, the resulting effective f/ratio becomes around f/6.8. When attached to Meade's f/8 ACF, the resulting effective f/ratio will be around 5.5, resulting in a substantially "faster" optical system that cuts exposure times in half while increasing the field of view.

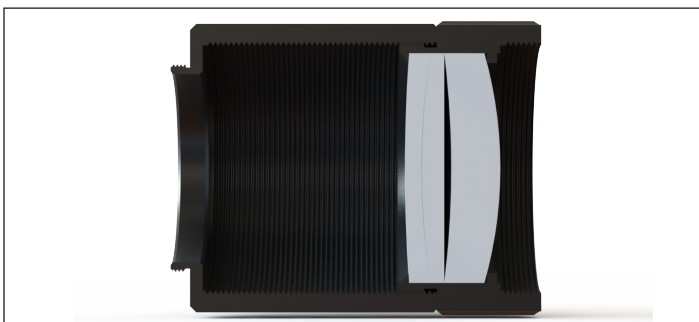


Fig. 3: Focal Reducer Lens System

The reducers optical design provides full illumination of a 22mm diagonal image sensor and nearly full illumination out to 28mm, with just slight vignetting that is corrected with flat field calibration. It boasts a generous 105mm of back-focus distance to the image plane, measured from the reducer's flange, or 100mm on-axis from the last lens, allowing loads of space for imaging train accessories such as a filter wheel and/or an off axis-guider.

Installation:

To install the focal reducer onto your Meade ACF tele-

scope, first remove the threaded protective dust cap from the reducer. Then thread the reducer directly onto the back cell of the telescope using the 2"-24 TPI threads.

The included T-adapter, with a length of 50mm and an M42x0.75 thread, is well-suited for various applications to achieve the nominal 105mm back focus required by the reducer. It's suitable for use with DSLR cameras equipped with a t-ring, as well as many cameras with a 55mm depth-to-sensor distance.

For dedicated astronomy cameras, additional adapters (user-supplied) may be needed to reach the reducers nominal back focus distance. See Fig. 5. Various adapters of different length and attaching thread sizes are available from third-party suppliers. These additional adapters typically connect to the M42x0.75 t-thread connection at the end of the included T-adapter and then to your camera or filter wheel.

To determine the length of the additional adapter (if needed), locate the depth-to-sensor distance for your camera. This is often called the camera backfocus. This is the distance from the cameras mounting point to the image sensor and is usually found in the camera instructions or webpage. Next, measure the distance the other equipment in your imaging train requires. This includes filter wheels, off-axis guiders, electronic focusers, connecting adapters, and anything else between the focal reducer and camera sensor. Add up the camera's backfocus distance and other image equipment distances. This is the total working distance (X) required by your imaging equipment.

Note: If using the Meade Zero-image Shift microfocuser, the minimum needed backfocus for this device is 60mm with the focuser draw tube fully retracted. When using this focuser, removal of the included 50mm T-adapter is necessary.

Since the focal reducers nominal back focus is 105mm when measured from its mounting flange, subtract the distance in mm your imaging equipment requires (X) from 105mm to get the adapter length (Y) needed to reach nominal focus.



Looking at or near the Sun will cause irreversible damage to your eye. Do not point this telescope at or near the Sun without a proper solar filter attached.

If the calculated distance (Y) is 50mm, only the included 50mm T-adapter is needed to reach nominal focus.

If the calculated distance (Y) is less than 50mm, you need to remove the included 50mm T-adapter and replace it with a shorter adapter with the length you calculated to reach the 105mm back focus distance. This shorter adapter will need to have the 2"-24 female thread on one side to attach to the focal reducer. The other side of this adapter will thread onto your imaging equipment.

If the calculated distance (Y) is more than 50mm, additional T-adapters will be needed to reach the nominal 105mm back focus distance. To determine the adapter length needed, subtract the calculated distance (Y) from 50mm (since the included T-adapter is 50mm) to determine the needed adapter length.

Proper Care and Maintenance:

Avoid cleaning the focal reducer optics as a little dust on the surface causes virtually no degradation of image quality and should not be considered reason to clean the lens. DO NOT disassemble the focal reducer to clean the interior lens surfaces. When absolutely necessary, dust should be removed with gentle strokes of a camel hair brush or blown off with an ear syringe (available from telescope shops or the local pharmacy). DO NOT use a commercial photographic lens cleaner. Organic materials (e.g., fingerprints) on the optics may be removed with a solution of 3 parts distilled water to 1-part isopropyl alcohol. One drop of biodegradable dishwashing soap per pint of solution may also be added. Use soft, white facial tissues and make short, gentle strokes. Change tissues often. Store the focal reducer in a dry, dust-free environment.

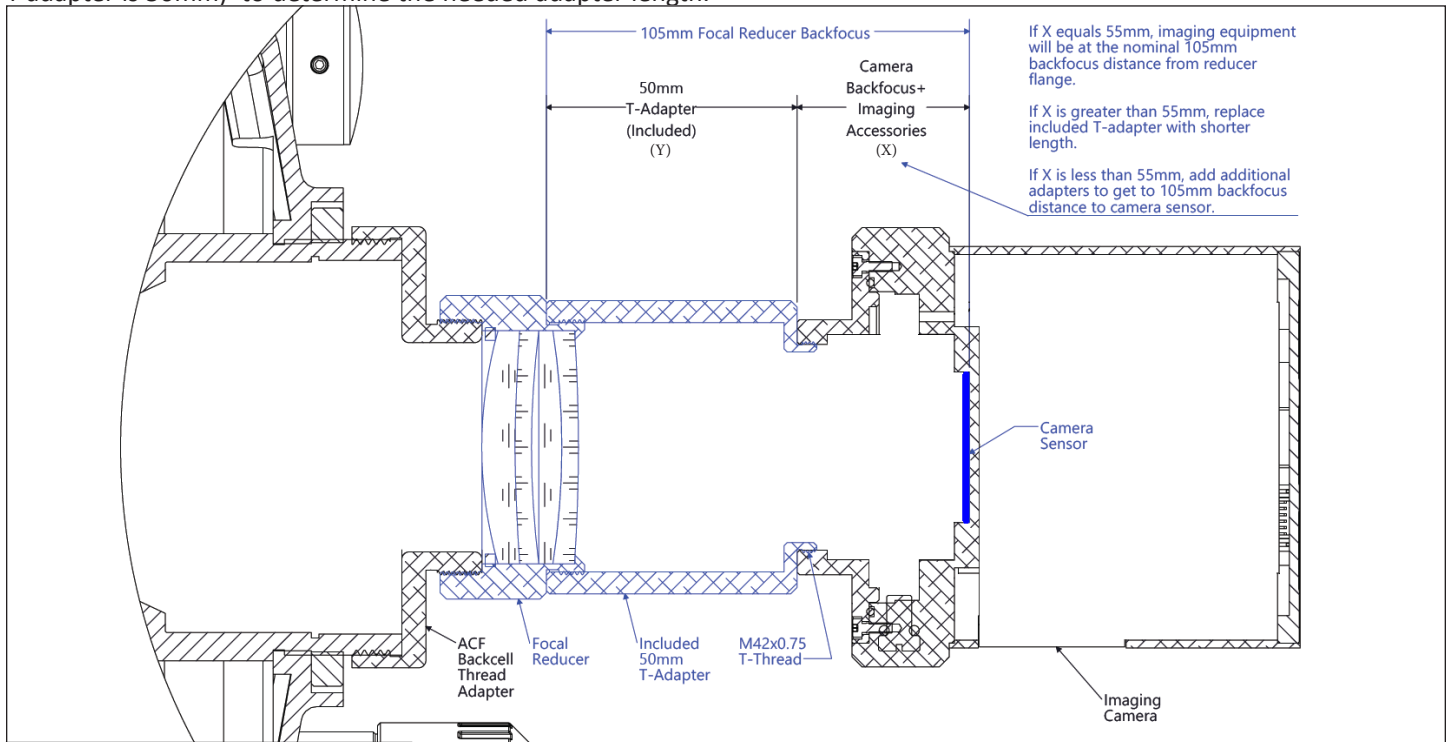


Fig. 5: Back Focus Distance to Camera

Meade Instruments Warranty:
 The Meade Instruments Statement of Limited Warranty is published at: www.meade.com/supports/warranty/
 A printed copy of the Meade Statement of Limited Warranty will be made available by Meade upon written request. See below for Meade contact information.

Warranty Claim
Meade Instruments
 89 Hangar Way
 Watsonville, CA 95076 U.S.A • +1 (800) 626-3233
 customerservice@meade.com • SUBJECT: Warranty Claim

Specifications:
 Focal Reduction:.....~ 0.68x
 Unvignetted Field of View:.....22mm
 Corrected Field of View:.....28mm
 Optical Coatings:.....fully multi-coated
 Back Focus Distance:
 Flange Distance:.....105mm
 On-axis Distance:.....100mm
 Reducer Threads:
 Telescope Side:.....2"-24 (female)
 Camera Side:.....2"-24 (male)
 50mm Adapter Threads:
 Telescope Side:.....2"-24 (female)
 Camera Side:.....M42x0.75 (male)

Dimensions(Reducer + Adapter):.....2.3" diameter x 2.95" L
 Weight(Reducer + Adapter):.....8.5 oz



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