

INSTRUCTION MANUAL

Orion Field Flattener for EON 104mm ED-X2 Triplet Refractor

#5302

The Orion Field Flattener for EON 104mm ED-X2 was designed exclusively for the EON 104 ED-X2 Triplet Apo Refractor, to flatten the focal plane for astro-imaging without affecting the focal length of the telescope, even on full-frame camera sensors. For photography only, not visual use, this high-performance 2" field flattener is highly recommended for obtaining the highest-quality images with your EON 104.

This field flattener has an optimal backfocus distance of 55mm (distance from threaded attachment plate to camera sensor). It comes with interchangeable, thread-on adapter plates, one with 42mm (T-mount) male threads, the other with wider, 48mm male threads (which are equivalent to 2" filter threads).



Figure 1. The Orion Field Flattener for EON 104mm ED-X2

 **ORION**
TELESCOPES & BINOCULARS
AN EMPLOYEE-OWNED COMPANY

Corporate Offices: 89 Hangar Way, Watsonville CA 95076 - USA
Toll Free USA & Canada: (800) 447-1001
International: +1(831) 763-7000
Customer Support: support@telescope.com

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Attaching the Field Flattener to a DSLR Camera

The field flattener's 55mm backfocus distance is designed to work with most DSLR cameras without the need for any additional extension rings (**Figure 2.1**). A T-ring for the make and model of your camera is the only required accessory to attach the field flattener to your DSLR camera. The ring can be either a standard 42mm T-ring or a wide 48mm T-ring. The 48mm T-ring, when used with the 48mm adapter plate of the field flattener, is ideal for use with full-frame camera sensors as it will reduce the possibility of vignetting, giving you better illumination at the edges of the sensor.

Attaching the Field Flattener to a CCD Camera

Most CCD cameras have a shorter flange focal distance – the distance from the camera's lens mounting flange to the focal plane, or sensor—than a DSLR camera. That means you will need to add extension as needed to fill the 55mm of required distance to the field flattener (**Figure 2.2**). T-thread extension rings, or spacers, of different lengths are available separately; you just need to calculate how much extension is needed for your particular camera. Consult your camera's manual to determine the flange focal distance.

For example, if a camera has a flange focal distance of 20mm, i.e., its focal plane is 20mm behind the lens mounting flange, you would need to add 35mm of space between the camera and field flattener to achieve the proper distance ($20 + 35 = 55\text{mm}$). Note that if you do not reach 55mm exactly, the field flattener will still work, but will gradually lose its effectiveness the farther in or out from 55mm your camera is positioned.

Your CCD camera must have compatible 42mm or 48mm female T-threads on the camera body to attach to the field flattener. Remove the camera's nosepiece (if it's equipped with one) and thread the camera body directly onto the back of the field flattener or threaded spacer ring.

Care & Maintenance

Care should be exercised when using all optical and mechanical telescope accessories. Keep your field flattener in a protected environment when you're not using it, and place the dust cap and threaded metal cap on the Field Flattener for storage. Avoid touching the lenses and coatings. If the outside of the lens should become dirty, you may want to clean it. Remove loose dirt with a blower bulb or lens brush. Use only optical lens tissue and good-quality lens fluid. Wet a folded tissue and gently wipe the surface of the lens. Immediately use a second piece of lens tissue to gently dry the lens off. Do not rub or apply pressure, as this may scratch the lens if dust or grit is present.

Specifications

Optics	2-element, fully-multicoated
Clear Aperture	50mm
Focal Length	55mm
Mechanical Length	50.2mm
Barrel:	2", tapered neck, threaded for 2" filters
Weight	8.3 oz (23.4g)
Adapter plate threads:	42x0.75mm "T-thread" (male) 48x0.75mm (male)

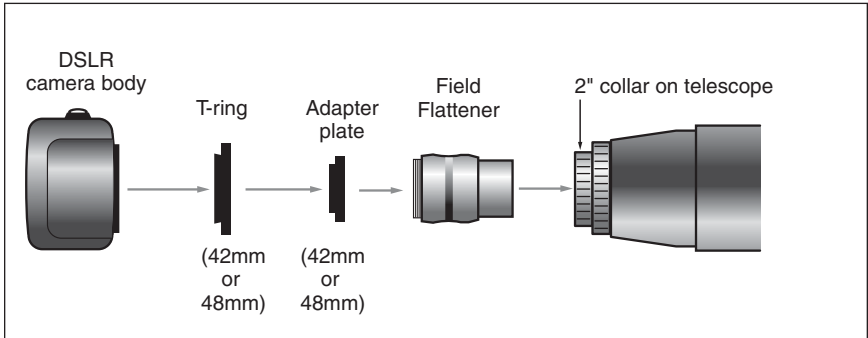


Figure 2.1. Using the field flattener with a DSLR camera.

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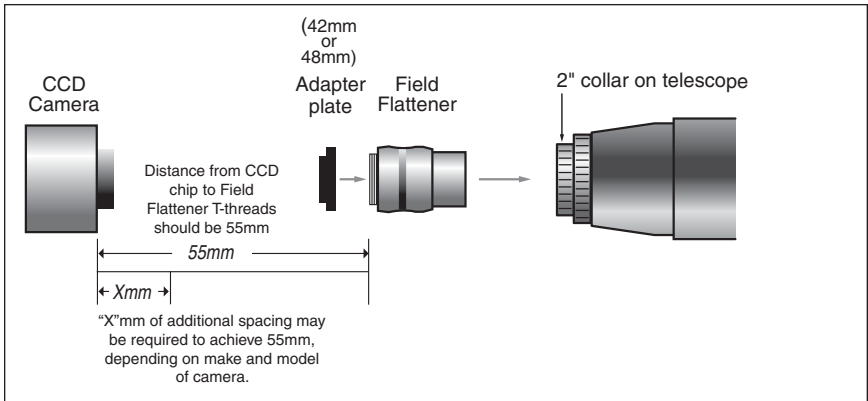


Figure 2.2. Using the field flattener with a CCD camera.

One-Year Limited Warranty

This Orion product is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

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For further warranty information, please visit www.OrionTelescopes.com/warranty.



Corporate Offices: 89 Hangar Way, Watsonville CA 95076 - USA
Toll Free USA & Canada: (800) 447-1001
International: +1(831) 763-7000
Customer Support: support@telescope.com

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