

New Product Announcement:
FCT-L Flattener 0.99x and FCT-L Reducer 0.8x



Takahashi announces the release of the FCT-L Flattener 0.99x and FCT-L Reducer 0.8x, two newly designed conversion lenses for the FCT-114D series and selected FC refractors.

These conversion lenses were developed to improve photographic performance while retaining the optical characteristics of the compatible Takahashi refractors. The flattener corrects field curvature with virtually no change in focal length, while the reducer shortens the focal length to 0.8x for a faster photographic system.

The FCT-L conversion lenses are compatible with the FCT-114DF, FCT-114DS, FC-100DZ, and FC-100DF. In both designs, particular attention was paid to maintaining uniform star-image quality, including spot size and shape, as well as ample relative illumination across the field.

Each conversion lens is used with a separately sold FCT-L CO Ring. Use the FCT-L CO Ring 114D with the FCT-114DF, FCT-114DS, and FC-100DZ, and the FCT-L CO Ring 100DF with the FC-100DF. The two rings have different optical path lengths, providing the correct spacing and optimum correction for each optical system.

FCT-L Flattener 0.99x [TKA34582]



The FCT-L Flattener 0.99x is a 2-element/2-group field flattener with an M72 threaded connection. It changes the focal length only slightly and provides a 55 mm image circle with high relative illumination and well-corrected stellar images across the field.

With the FCT-114DF, relative illumination remains nearly 100% even at the edge of a full-frame sensor. With the FCT-114DS, illumination gradually decreases toward the edge because of the smaller drawtube inner diameter, but remains approximately 90% at the edge of full frame. For the FCT-114D series, the RMS spot diameter is 4.4 μm on axis and 5.8 μm at the edge of full frame.

With the FC-100DZ, illumination begins to decrease around the APS-C area, but remains approximately 93% at the edge of full frame. The RMS spot diameter is 4.8 μm on axis and 7.2 μm at the edge of full frame. With the FC-100DF, a slight chromatic halo originating from the objective lens remains. The system provides well-corrected star images across the full-frame field while maintaining nearly 90% relative illumination at the edge of full frame.

FCT-L Reducer 0.8x [TKA34580]



The FCT-L Reducer 0.8x is a 3-element/2-group reducer with an M72 threaded connection. It shortens the focal length to 0.8x, providing a faster focal ratio and a 44 mm image circle while maintaining well-corrected stellar images to the edge of the field.

With the FCT-114DF, relative illumination at the edge of a full-frame sensor is approximately 92%. With the FCT-114DS, illumination begins to fall at an image height of approximately 20 mm, but remains approximately 83% at the edge of full frame. For the FCT-114D series, the RMS spot diameter is 4.4 μm on axis and 6.6 μm at the edge of full frame.

With the FC-100DZ, illumination likewise begins to decrease at an image height of approximately 20 mm and remains approximately 83% at the edge of full frame. The RMS spot diameter is 4.8 μm on axis and 7.2 μm at the edge of full frame. With the FC-100DF, a slight chromatic halo originating from the objective lens remains. Relative illumination is approximately 82% at the edge of full frame. The RMS spot diameter is 6.6 μm on axis and 9.6 μm at the edge of full frame.

Specifications

FCT-L Flattener 0.99x [TKA34582]

Compatible optical tubes	FCT-114DF, FCT-114DS, FC-100DZ, FC-100DF
Focal length	FCT-114DF: 795 mm (f/7.0) FCT-114DS: 795 mm (f/7.0) FC-100DZ: 791 mm (f/7.9) FC-100DF: 734 mm (f/7.3)
Mounting thread	Objective side: M72 P=1.0 male Camera side: M72 P=1.0 male
Image circle	Ø55 mm
Optical configuration	2 elements in 2 groups
Dimensions	Ø78 x 35.5 mm
Weight	270 g

FCT-L Reducer 0.8x [TKA34580]

Compatible optical tubes	FCT-114DF, FCT-114DS, FC-100DZ, FC-100DF
Focal length	FCT-114DF: 639 mm (f/5.6) FCT-114DS: 639 mm (f/5.6) FC-100DZ: 636 mm (f/6.4) FC-100DF: 587 mm (f/5.9)
Mounting thread	Objective side: M72 P=1.0 male Camera side: M72 P=1.0 male
Image circle	Ø44 mm
Optical configuration	3 elements in 2 groups
Dimensions	Ø78 x 59.5 mm
Weight	560 g

FCT-L CO Ring 114D [TKA34200]



Compatible optical tubes	FCT-114DF, FCT-114DS, FC-100DZ
Optical path length	20 mm
Mounting thread	Objective side: M72 P=1.0 female Camera side: M72 P=1.0 female
Dimensions	Ø76 x 20 mm
Weight	32 g

FCT-L CO Ring 100DF [TKA19200]



Compatible optical tube	FC-100DF
Optical path length	23 mm
Mounting thread	Objective side: M72 P=1.0 female Camera side: M72 P=1.0 female
Dimensions	Ø76 x 23 mm
Weight	37 g

Camera Connection

For camera connection, use the separately sold M72 adapter appropriate for your camera. Use the M72-M48 CMOS Adapter [TKP00200] for CMOS cameras with an M48 threaded connection, or the M72-M54 CMOS Adapter [TKA00201] for cameras with an M54 threaded connection. With either CMOS adapter, set the distance from the base of the camera-side thread to the image sensor plane to 55 mm.

For DSLR cameras, use the M72 WR Adapter [TKA00202] together with the separately sold Camera Mount (Wide T-Mount) DX-WR for your camera. Camera Mount DX-WR versions are available for Canon EOS (EF) [TKA01251] and Nikon (F) [TKA01255].

A Camera Angle Adjuster M [TKA23200N] is used to connect the system to each optical tube. When using the FCT-L Flatteners 0.99x with the FC-100DZ or FC-100DF, the M72 Extension Tube L52 [TKA23250] is also required. Refer to the system chart for detailed connection configurations.

M72-M48 CMOS Adapter [TKP00200]

Optical path length	5.7 mm
Mounting thread	Objective side: M72 P=1.0 male Camera side: M48 P=0.75 male
Weight	49 g

M72-M54 CMOS Adapter [TKA00201]

Optical path length	5.7 mm
Mounting thread	Objective side: M72 P=1.0 male Camera side: M54 P=0.75 male
Weight	46 g

M72 Camera Adapter [TKA00202]

Optical path length	4.5 mm
Mounting thread	Objective side: M72 P=1.0 male Camera side: M54 P=0.75 female
Weight	32 g