

Takahashi Back Focus Guide for CCD and Photographic Applications

Model - Focal Ratio	Focal length - metal back distance	Reducer F-ratio · focal length · metal back distance	Flattener focal ratio · focal length · metal back distance
FC-50 . f/8.0	400mm	f/5.8 · 290mm · 55.0mm	n/a
FS-60C . f/5.9	355mm · 143.9mm	f/4.4 · 264mm · 56.0mm	f/6.2
FC-60E . f/8.3	500mm · 173.5mm	f/6.3 · 380mm · 60.7mm	n/a
FC-65 . f/7.7	500mm	f/5.9 · 380mm · 60.79mm	n/a
FCT-76 . f/6.4	487mm	f/4.5 · 345mm · 72.8mm	n/a
FS-78 . f/8.1	630mm · 165.9mm	f/6.1 · 474mm · 72.3mm	n/a
FSQ-85ED . f/5.3	450mm · 200mm	f/3.86 · 328mm · 72.2mm	f/8.0 · 675mm · 117.5mm
FCL90 (SKY-90) . f/5.6	500mm · 170.5mm	f/4.5 · 407mm · 72.2mm	same
FCT-100 . f/6.4	640mm	f/4.6 · 460mm · 76.95mm	n/a
FS-102 . f/8	820mm · 194.5mm	f/6.0 · 614mm · 83.9mm	n/a
FSQ-106 f/5	530mm · 120mm		
FSQ-106ED f/5	530mm · 178mm	f/3.6 · 385mm · 72.2mm	f/8.0 · 850mm · 117.5mm
FC-125 . f/5.6	705mm	f/5.9 · 740mm · 134.5mm	n/a
FS-128 . f/8.1	1040mm · 198.78mm	f/6.0 · 770mm · 83.9mm	n/a
FS-128F . f/8.1	1040mm · 218.5mm	f/6.0 · 770mm · 106.2mm	f/8.2 · 1055mm · 106.2
FCT-150 . f/7.0	1050mm · 309mm	f/5.0 · 750mm · 102.45mm	n/a
FS-152 . f/8	1216mm · 218.5mm	f/6.0 · 774mm · 106.2mm	f/8 · 1223mm · 106.2
BRC-250 f/5	1250mm · 106.2mm	n/a	n/a
FRC-300 f/7.8	2348mm · 106.2mm	f/5.9 · 1770mm · 83.7mm	
TOA-130 . f/7.7 2.7" focuser	1000.0mm · 200.0mm	f/5.79 · 780mm · 83.7mm w/TOA Reducer f/5.6 · 728mm · 106.2mm w/Super Reducer	f/7.5 · 980mm · 117.5mm w/TOA-130 FN
TOA-130 . f/7.7 4" focuser	1000.0mm · 200.0mm	f/5.79 · 780mm · 83.7mm w/TOA Reducer f/5.6 · 728mm · 106.2mm w/Super Reducer	f/7.7 · 1000mm · 106.2mm w/TOA-130FF
TOA-150 . f/7.33	1100mm · 214mm	f/5.7 · 860mm · 106.2mm w/TOA Reducer f/5.5 · 825mm · 106.2mm w/Super Reducer	f/7.3 · 1090mm · 106.2mm w/TOA-130FF
TSA-102S f/8.0	816mm	f/5.98 · 610mm w/TOA Reducer	f/7.84 · 800mm w/TOA Flattener
E-130 . f/3.3	430mm · 56.0mm	n/a	
E-160 . f/3.3	530mm · 56.0mm	n/a	
E-200 f/4.0	620mm · 59.8mm	n/a	
E-210 . f/3.0	628mm · 62.8mm	n/a	
E-250 . f/3.4	854mm · 84.2mm	n/a	
E-300 . f/3.8	1130mm · 122.0mm	n/a	
E-350 . f/3.6	1248mm	n/a	
M-180 . f/12.0	2160mm · 133.0mm		f/9.8 · 1763mm · 56.0mm
M-210 . f/11.5	2415mm · 162.0mm		f/9.3 · 1961mm · 56.0mm
M-250 . f/12.0	3000mm · 150mm		f/9.3 · 2328mm · 56.0mm
M-300 . f/11.9	3572mm · 107.5mm		f/9.1 · 2739mm · 56.0mm
CN-212 . f/12.4	2630mm · 154.0mm	f/9.9 · 2105mm · 56.0mm	
CN-212 . f/3.9	820mm · 56.0mm		
MT-130 . f/6.1	795mm · 91.0mm	f/4.8 · 618mm · 56.0mm	*f/8.2 · 1060mm · 61.0mm
MT-160 . f/6.3	1000.0mm · 93.0mm	f/4.9 · 776mm · 56.0mm	*f/8.3 · 1330mm · 61.0mm
MT-200 . f/6	1200.0mm · 87.0mm	f/4.9 · 970mm · 56.0mm	*f/8.0 · 1600mm · 61.0mm
EXTENDER-Q 1.6X	125mm		
EXTENDER-TOA 1.6X	117.5mm		

*Extender/Flattener

The metal back distance is measured from the point at which the end of the reducer and the camera adapter come together, hence the name "metal back".

Takahashi has measured these distances for optimum performance for photographic or CCD applications.

Takahashi Backfocus Guide

Model	Bare			Reducer			Flattener		
	F Ratio	F Length	Back Focus	F Ratio	F Length	Metal	F Ratio	F Length	Metal
FC-50	f/8	400		F/5.8	290	55	n/a		
FC-60E	f/8.3	500	173.5	F/6.3	380	60.7	n/a		
FS-60C	f/5.9	355	143.9	F/4.4	264	56	F/6.2		
FS-78	f/8.1	630	165.9	F/6.1	474	72.3	n/a		
FS-102	f/8	820	194.5	F/6	614	83.9	n/a		
FS-128	f/8.1	1040	198.78	F/6	770	83.9	n/a		
FS-128F	f/8.1	1040	218.5	F/6	770	106.2	F/8.2	1055	106.2
FS-152	f/8	1216	218.5	F/6	774	106.2	F/8	1223	106.2
SKY-90	f/5.6	500	170.5	F/4.5	407	72.2	same		
FC-65	f/7.7	500		F/5.9	380	60.79	n/a		
FCT-76	f/6.4	487		F/4.5	345	72.8			
FCT-100	f/6.4	640		F/4.6	460	76.95			
FC-125	f/5.6	705		F/5.9	740	134.5			
FCT-150	f/7	1048		F/5.0	750	102.45			
e-130	f/3.3	430	56	n/a					
e-160	f/3.3	530	56	n/a					
e-200	f/4	620	59.8	n/a					
e-210	f/3	628	62.8	n/a					
e-250	f/3.4	854	84.2	n/a					
e-300	f/3.8	1130	122	n/a					
e-350	f/3.6	1248		n/a					
m-180	f/12	2160	133				F/9.8	1763	56
m-210	f/11.5	2415	162				F/9.3	1961	56
m-250	f/12	3000	150				F/9.3	2328	56
m-300	f/11.9	3572	107.5				F/9.1	2739	56
CN-212	f/12.4	2630	154	F/9.9	2105	56			
CN-212							F/3.9	820	56
FSQ-106	f/5.0	530	120						
FSQ-106ED	f/5.0	530	178	F/3.6	385	72.2	F/8.0	850	117.5
TOA-130	f/7.7	1000		F/6.0	780	83.7	F/7.5	980	117.5
TOA-130F	f/7.7	1000		F/6.0	780	106.2	F/7.7	1000	106.2
TOA-150	f/7.3	1100		F/5.0	750	106.2	F/7.2	1080	106.2
C-400	f/14	5600	223	F/10.4	4170	106.2			
ExtQ 1.6X			125						
EX-TOA 1.6X			117.5						
MT-130	f/6.1	795	91	F/4.8	618	56	F/8.2	1060	61
MT-160	f/6.3	1000	93	F/4.9	776	56	F/8.3	1330	61
MT-200	f/6	1200	87	F/4.9	970	56	F/8	1600	61
TSA-102	f/8	816	230	f/5.98	610	83.7	f/7.84	800	117.5
TSA-120	f/7.5	900	230	f/5.6	610	83.7	f/7.3	880	117.5
E-180	f/2.8	500	56						
CCA-250	f/5	1250	56	f/3.6	900	56	f/7.5	1875	56