

ZOOM

LENS ROUND-UP

PART 4



Group shot of the four lenses on test. Left to right: Nikon, Tamron, Canon and Vivitar.

The final instalment of our 70-210mm zoom review takes in four quality lenses costing over £170 each. David Cocksedg looks at entries from Canon, Nikon, Tamron and Vivitar and sums up the findings from four weeks of zoom testing.

Tamron 70-210mm f/3.5

THE Tamron Adaptall system is unique in that the lens can be adapted to fit a vast range of different camera bodies merely by changing mounts—you don't change the lens. So if you change your camera system from Pentax to Canon, you can retain your Tamron lens and buy a Canon Adaptall mount for £14.95 and keep using it. This zoom is quite a beast—154.5mm long at shortest focusing (infinity) and weighing 860g. Inside it has 15 elements in 11 groupings. Attach the hood, zoom out to 210mm and 0.85m, and the whole assembly juts out 222mm from your camera body. That's front heavy!

The hood ingeniously clips onto the zoom/focus control, instead of the lens barrel, so that at 210mm, which is farthest from the mount end, it protrudes well ahead of the front element to protect against

flare. Macro is a very good 1:2.6 at 210mm with focusing down to 0.85m. Small objects such as a matchbox can fill the frame and there is a handy f/32 stop for shooting in this mode (camera tripod-mounted).

Focal lengths at 210, 135, 100, 80 and 70mm are etched on the lens barrel in that order down towards the mount end to which the appropriate Adaptall fitting is attached. There are colour coded depth of field lines for apertures f/32, 16 and 8 either side of the index, with f/16 to the right doubling as an infra-red focus line. The aperture settings are in firm half click stops, except between f/3.5-5.6 and f/22-32. On the barrel are also macro settings when using the lens in conjunction with a 2× teleconverter. At 210mm, maximum magnification then becomes 1:1.5 with maximum aperture f/8.

Focusing is a long pull from 0.85m to infinity in almost a complete turn, centre to left, but the zooming and focusing actions are deft, sure and smooth. Viewfinder

DATA PANEL

Lens: Tamron 70-210mm f/3.5
Aperture range: f/3.5-32
Minimum focusing distance: 0.85m
Macro magnification ratio: 1:2.6
Filter size: 62mm
Lens hood: Yes, clip-on type
Angle of view: 34-12deg
Element/groups: 15/11
Available fits: Nikon, Pentax K, Minolta MD, Canon, Olympus OM4, Leica, Ricoh KR, Praktica, Konica, Fujica, Contax/Yashica, Mamiya, Rollei M42 screw
Weight (g): 860
Length × diameter: 154.5 × 71mm
Price (approx): £184.45
Distributor: Johnsons of Hendon Ltd, 14 Priestley Way, Eldonwall Trading Estate, London NW2 7TN.



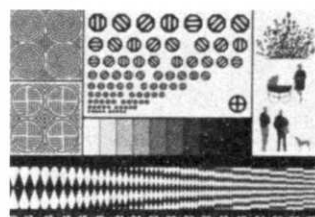
LENS PERFORMANCE

Tamron 70-210mm f/3.5	Poor	Fair	Average	Good	Very good	Excellent
Overall performance					●	
Central definition					●	
Edge definition					●	
Image contrast						●
Optical balance					●	
Notes:	Best central definition f/11-16 Best overall definition f/11 Best edge definition f/16					

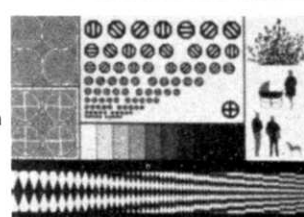
Comments on performance:

Image contrast was so good we had to rate this as *excellent*. Otherwise, all apertures were consistently very good, except for f/32 where there was slight fall-off in image detail over preceding (f/22) stop.

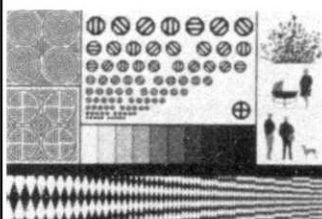
The top pictures show the whole of the negative area, while the four below are sections from 20in enlargements. These show lens performance at its best and worst. Ilford Pan F film, Acutol developer 5min 20degC.



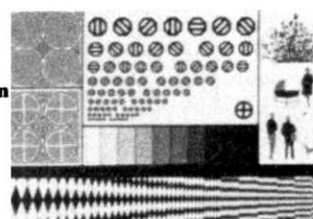
Best: f/16 centre



Worst: f/32 edge



Best: f/11 centre



Worst: f/32 edge

image brightness is good throughout the range, thanks to the fast f/3.5 consistent aperture, the fastest of any lens (at 210mm) tested in these four groupings. In the test for barrel distortion, the Tamron came out ahead also—this was just faintly apparent at the 210mm setting. Retail price is £184.45 including a sturdy lens case.

Canon 70-210mm f/4

Made from more conventional materials than the Canon 75-200mm f/4.5 lens tested in group 3 last week, this Canon zoom has macro to 1:4 at the 70mm setting only, and a price tag of £178. For macro work, there is an extra stop of f/32, which can be very useful when using the camera and lens on a tripod to shoot miniature subjects with long exposures. Minimum focusing here is 1.2m.

We have to give the Canon full marks for handling—the combined zoom/focus control is smooth, quick and responsive with just the right amount of dampening to hold focus as you zoom through the focal range, which has 210mm nearest the mount: you can gauge precise focus at the long end and then pull out to the desired framing option. The 70mm end is colour coded to indicate macro mode, where it locks in by twisting the control ring farther to the right after 1.2m on the focusing scale. This latter is a half turn to the left from 1.2m to infinity symbol.

The lockable aperture ring is in firm half and full click stops all the way through from f/4 to f/32, which is handy for fine tuning manual or aperture priority exposures. Depth of field scale is either side of the index line at f/8, 16 and 32.

Canon focusing screens are always bright, and image sharpness with this lens is difficult to fault, making focusing for sudden focal shifts quick and easy. Barrel distortion is visible at the edges of the frame at 210mm, however.

The Canon takes 58mm filters, is constructed from 12 elements in 9 groups and will take an optional clip-on lens hood to reduce flare in bright conditions.

DATA PANEL

Lens: Canon FD 70-210mm f/4
Aperture range: f/4-32
Minimum focusing distance: 1.2m
Macro magnification ratio: 1:4
Filter size: 58mm
Lens hood: Yes, optional extra
Angle of view: 34-12deg
Elements/groups: 12/9
Available fits: Canon FD
Weight (g): 645
Length × diameter: 151 × 65mm
Price (approx): £178
Distributor: Canon UK Ltd, Brent Trading Centre, North Circular Road, Neasden, London NW10 0JF.



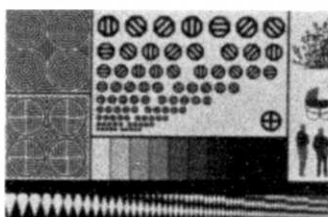
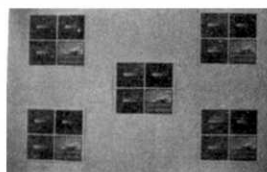
LENS PERFORMANCE

Canon FD 70-210mm f/4	Poor	Fair	Average	Good	Very good	Excellent
Overall performance				●		
Central definition				●		
Edge definition			210mm 70mm	●	●	
Image contrast				●		
Optical balance			●			
Notes: Best central definition f/11 Best overall definition f/11-f/16 Best edge definition f/11 at 70mm; f/16 at 210mm						

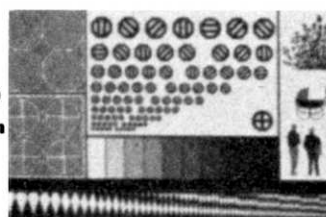
Comments on performance:

While central definition remained pretty good, there was noticeable fall-off opened up at the edge, particularly at the 210mm end of the zoom range, where softness and distortion was apparent.

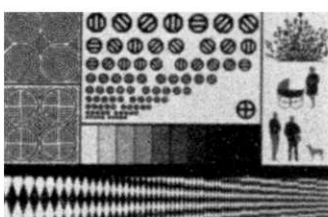
The top pictures show the whole of the negative area, while the four below are sections from 20in enlargements. These show lens performance at its best and worst. Ilford Pan F film, Acutol developer 5min 20degC.



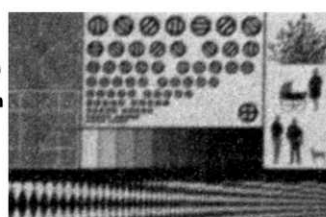
Best: f/11 centre



Worst: f/4 edge



Best: f/11 centre



Worst: f/32 edge

Nikon Series E 70-210mm f/4

A pretty solid looking lens, weighing 730g, the Nikon carries the highest price tag of this lot at £266. Minimal focusing is down to 1.5 metres, with macro focusing (only at the 70mm end) down to 0.56m. This is a series E lens, aimed primarily at the amateur market at a more affordable price than other Nikon optics which, however, still puts it way ahead of independents in cost terms.

But of course it's a quality zoom. Handling is superb, with a pleasingly deft zoom/focus control sliding towards the camera for maximum focal length and focusing in a half turn to the right. For macro (1:4) you pull the control out to 70mm, then twist out of minimum focus in a third of a turn to the left with distance scale marked at 1.2m and 0.56m. The control locks at 70mm. Small objects can then be brought up to swamp the frame, and there is an f/32 stop to maximise depth of field when shooting from a tripod in this mode.

Zoom lengths at 70, 85, 100, 135 and 210mm are marked to the right of the index line on the barrel and there are colour coded depth of field lines for stops f/32 and f/11 either side. To the left is a red curved line for infra-red focusing at all zoom settings. Apertures are in full stops only, centre to right, and the settings are repeated in miniature behind the serrated grips of the aperture ring by the mount end.

The consistent f/4 aperture means that viewfinder brightness remains crisp and clear throughout the zoom range and there is some barrel distortion at 210mm towards the edges, but normally this would not be apparent.

Vivitar 70-210mm f/2.8-4

Vivitar's original 70-210mm made quite an impact when it was launched in 1972, giving zooms a 'respectability' they didn't have before. The latest Series 1 version opens to f/2.8 at the 70mm end, but becomes restricted as you move down the barrel to

AP GROUP LENS TEST

DATA PANEL

Lens: Nikon 70-210mm f/4
Aperture range: f/4-32
Minimum focusing distance: 1.5m
 (0.56m macro)
Macro magnification ratio: 1:4
Filter size: 62mm
Lens hood: No
Angle of view: 34-12deg
Elements/groups: 13/9
Available fits: Nikon
Weight (g): 730
Length x diameter: 156 x 72.5mm
Price (approx): £266
Distributor: Nikon (UK) Ltd, 380
 Richmond Road, Kingston-on-
 Thames, Surrey KT2 5PR.



LENS PERFORMANCE

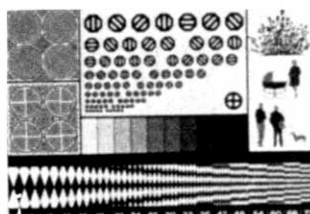
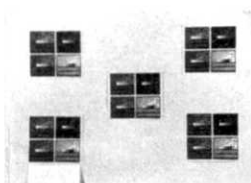
Nikon E 70-210mm f/4	Poor	Fair	Average	Good	Very good	Excellent
Overall performance					●	
Central definition					●	
Edge definition					●	
Image contrast					●	
Optical balance					●	

Notes: Best central definition f/11
 Best overall definition f/11
 Best edge definition f/11

Comments on performance:

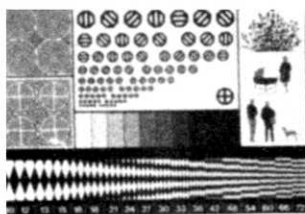
Difficult to spot differences between apertures all the way through the focal range, giving this lens a high rating on optical balance. At 70mm end, however there was some softness at f/32 while at 210 this was detectable at f/4 (both edge). Solid, consistent performer.

The top pictures show the whole of the negative area, while the four below are sections from 20in enlargements. These show lens performance at its best and worst. Ilford Pan F film, Acutol developer 5min 20degC.

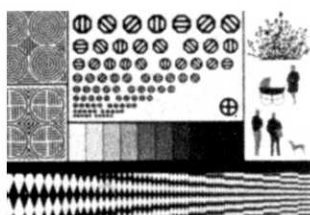


Best: f/11 centre

70 mm

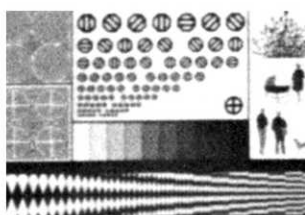


Worst: f/32 edge



Best: f/11 centre

210 mm



Worst: f/4 edge

DATA PANEL

Lens: Vivitar Series 1, 70-210mm
 f/2.8-4
Aperture range: f/2.8-22 (at 70mm),
 f/4-22 (at 210mm)
Minimum focusing distance: 1.5m
 (0.8m macro)
Macro magnification ratio: 1:2.5
Filter size: 62mm
Lens hood: No
Angle of view: 34-12deg
Elements/groups: 14/10
Available fits: Nikon, Pentax KA,
 Minolta MD, Canon, Olympus, Con-
 tax/Yashica
Weight (g): 860
Length x diameter: 139 x 70mm
Price (approx): £190
Distributor: Vivitar (UK) Ltd, Vivi-
 tar House, Nuffield Way, Abingdon,
 Oxon OX14 1RP.



LENS PERFORMANCE

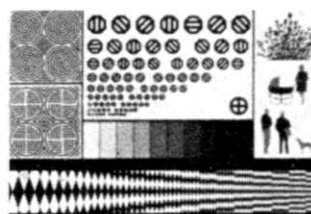
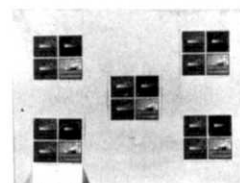
Vivitar 70-210mm f/2.8	Poor	Fair	Average	Good	Very good	Excellent
Overall performance					●	
Central definition					●	
Edge definition					●	
Image contrast					●	
Optical balance				●		

Notes: Best central definition f/5.6 at 70mm f/8 at 210mm
 Best overall definition f/8
 Best edge definition f/8-11

Comments on performance:

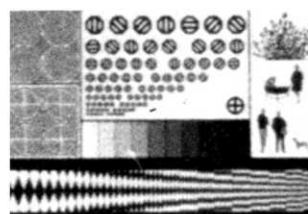
Impressive performance at the 70mm end, where image detail at f/5.6 and f/8 was exceptionally good. Let down slightly at the 210mm end, where maximum aperture of f/4 was found slightly wanting, though coming in well thereafter. This drops the rating on optical balance to good.

The top pictures show the whole of the negative area, while the four below are sections from 20in enlargements. These show lens performance at its best and worst. Ilford Pan F film, Acutol developer 5min 20degC.

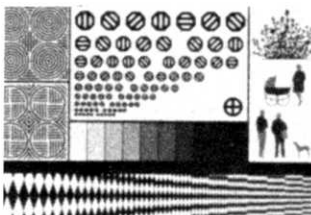


Best: f/5.6 centre

70 mm

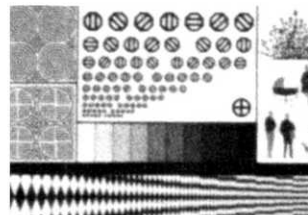


Worst: f/2.8 edge



Best: f/11 centre

210 mm



Worst: f/4 edge

210mm, where the aperture is only f/4. This is a pity, because you really need the extra light gathering aperture for telephoto work. At 70mm, minimum focus is to 1.6m. At 210mm, this becomes 0.8m with continuous twisting into macro scale on the large, rubberised zooming/focusing control. Macro works from 100 to 210mm with maximum reproduction a good 1:2.5.

Weighing in at 860g, because of the construction (14 elements in 10 groups), the lens balances well in both hands, but is rather front heavy on a camera body. Zooming and focusing is pleasingly smooth and responsive without being loose; and focus holds while changing focal length. At 70mm, viewfinder image brightness is good, but there is noticeable darkening at the corners of the frame as you pull in towards 210mm. Focal lengths are marked at 70, 100, 150 and 210mm left of the index line.

Aperture settings are in half stops, except between f/16-22, and on the barrel is colour coded information to indicate that maximum aperture at the far end of the focal range is f/4, plus depth of field lines and a red dot for focusing when using infra-red film.

As with most 70-210mm zooms, barrel distortion is visible at edges of the frame at maximum zoom setting. In six popular mounts, the Vivitar Series 1 takes 62mm filters and costs £190.

Conclusions

In photography, like everything else, you expect to pay more for quality. Group four in our zoom survey are not cheap optics, but they should consistently deliver the goods in terms of sharp images throughout the frame at almost all settings. But surprisingly, it is the independent Tamron that has the edge over the two camera makers' lenses (Canon and Nikon) and the Vivitar. It was tough to fault this zoom or to spot any important differences in the images at every aperture. A crisp set of prints had to rate an *excellent* for image contrast and optimum sharpness of small detail was judged to be at f/11. The Tamron costs £184.45, but note that there is an additional cost here in the Adaptall mount, which retails for

£14.95. That puts the total price at £199.40.

The Nikon Series E carries a hefty price tag of £266, which is quite a way ahead of all others tested here. Again, there was very little to fault optical performance on—just slight edge softness of image detail on f/32 at 70mm and wide open (f/4) at the telephoto end. Again, too, best stop was judged to be f/11.

The Vivitar scored highly especially at the 70mm end, where maximum aperture is a wide f/2.8. At 210mm, we could detect fuzziness and blurred image detail opened up at f/4. One stop later this disappeared and results snapped into pleasing sharpness which came in best at f/8. The Canon showed acceptable results in the middle of the frame all the way through, but edge performance fell away fairly dramatically, particularly wide open at the long end of the zoom range where we found distortion and image softness. Best central aperture at 210mm was f/11, while at the edge we judged it to be at f/16.

We commenced this large group test on Sep 28, with six budget zooms in the price range £70-£90 and the Sigma f/4.5 impressed the most with an excellent set of results at both ends of the focal range. The group two 'winner' on Oct 5 was the Yashica, narrowly coming out ahead of the seven in the £80-£110 price range, and scoring highly throughout in all categories without actually rating an excellent.

Higher up the price scale in group three were five lenses edging over £160, and the Cimko f/3.8 proved to be the best optically with optimum results at f/8 (70mm) and f/5.6 (210mm). It was narrowly ahead of a Rikenon, Canon 75-200mm f/4.5 and Takumar 70-200 f/4. Good lenses all, but not able to match the Cimko's low rrp of £129.95. The big guns of group four were shaded by the big Tamron model sporting a consistent f/3.5 aperture and costing just under £200 in total. Nearly all lenses yielded best results in the, f/8-11 range.

In general, budget zooms are slower and give up best results at smaller apertures, which is fine providing ambient light is good. But some cheaper models can score just as well as well known

zooms from the Canon, Nikon, Minolta and Olympus stables. We found barrel distortion especially at the far end (200 or 210mm) to be common all the way through this test, while it was noticeable that the more expensive models held sharpness wide open much better than the budgets. But expect the quality zooms to be somewhat bulkier and longer with larger front elements because of the more complicated internal construction and faster apertures.

Our panel judged the best bargain overall to be the Sigma f/4.5 model and the best performer overall to be the giant Tamron f/3.5 by a short head.

While browsing through the budget lenses, take a look at the new Tokina SZ-X 210, tested in our Sep 14 issue. It features an ingenious twin-U cam transport system and Super Low Dispersion (SD) glass and a total length of only 85mm. Suggested retail price is £100. We repeat the test chart and data panel below:

DATA PANEL

Lens: Tokina 70-210mm
Aperture range: f/4/5.6-f32
Minimum focusing: 1.1m **Macro magnification ratio:** 1:4
Filter size: 52mm
Lens hood: Clip-on
Angle of view: 34deg, 20min 11deg 30min
Elements/groups: 12/8
Available fits: Nikon F/AI-S, Pentax KA/Ricoh, Minolta MD, Canon FD, Olympus OM, Konica AR, Contax/Yashica
Weight (g): 445g
Length x diameter: 85x66mm
Price (approx): £100
Distributor: Introphoto Ltd, Priors Way, Maidenhead, Berks.



Tokina's ultra compact SZ-X 210mm zoom with twin U-cam system and SD (Super Low Dispersion) glass. See our test result below.

LENS PERFORMANCE

Tokina 70-210mm	Poor	Fair	Average	Good	Very good	Excellent
Overall performance						
Central definition				●	●	
Edge definition				●	●	
Image contrast					●	
Optical balance				●		
Notes: Best central definition f/11						
Best overall definition f/11-f/16						
Best edge definition f/16						