

Main image: Business district of Shinjuku, Japan

Development of the 17-35mm f/2.8 AFS

In 1999, Nikon stunned the photographic world with the introduction of the Nikon D1, a professional digital SLR camera developed by Nikon themselves. Not only did Nikon develop a professional digital camera superior to anything on the market, they also did it themselves. In the past, all professional digital Nikons were developed by Kodak. The Nikon D1 gives stunning images, at a fraction of the price of other digital cameras of the same class, bringing affordable digital technology to the masses.

Together with the Nikon D1 was the introduction of Nikon's newest AFS lens - Nikkor 17-35mm f/2.8 AFS. Because the Nikon D1 provided 1.5 times magnification of any focal length mounted (due to the size of the CCD), Nikon had to develop a wider zoom lens to provide wide-angle zoom. The result is this incredible hot new ultra wide-angle lens which translated to 25.5mm to 52.5mm on the Nikon D1.

However, when used on film-based Nikon SLRs, this stunning new lens covers the full 17-35mm focal range, with incredible clarity and edge to edge sharpness. Compact and sturdy, this lens will not doubt become the darling of many photojournalists.

Predecessor: Nikkor 20-35mm f/2.8 D IF

Before the Nikkor 17-35mm AFS was introduced, photojournalists were falling head over heels in love with the Nikkor 20-35mm f/2.8 IF. It was the widest zoom-Nikkor available then, and with a maximum aperture of f/2.8 and focal range of 20-35mm, it was no wonder why many photojournalists chose it to be their primary lens. However, the main draw back of the lens is the minimum focusing range of 0.5m (1.7 ft). Although the 0.5m limit is a respectable figure for a zoom-lens, many photojournalists preferred working close to their subjects, and this closest focusing limit was stifling to their working style. Especially when jostling for space in a crowd, distance is at a premium. There is nothing more frustrating than not being able to shoot because the subject is too close! Imagine....

Journalist: "Sorry Sir... I did not get the shot of Elvis Presley...."

Editor: "Why the hell not? Was he too far away?"

Journalist: "Errr... no Sir... actually he was too close to me... I couldn't focus with my lens..."

Editor: "What?? #&^%*^#%@ !!!!"

You get the picture....

Thus, in 1999 Nikon introduced the replacement lens - the Nikkor 17-35mm f/2.8 AFS IF-ED. Not only does it have a wider focal range, it effectively addressed the issue of minimum focusing distance by going all the way down to 0.28m (as compared to the 20-35mm len's 0.5m). This is nearly as close as you can get with a prime lens. To ensure superior performance, Nikon incorporated three aspherical lens elements and two ED glass elements to get the best image quality. In addition, the new lens uses the new Nikon AFS motor for silent and swift autofocusing.

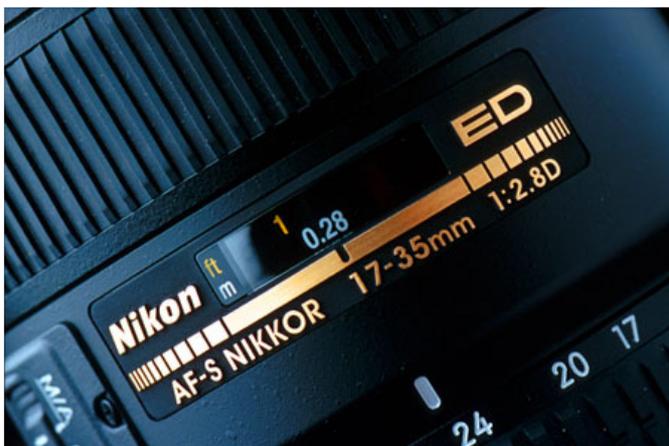
What is AF-S ?

With conventional autofocusing, the camera body has a motor which drives the autofocusing of the lens through a shaft which connects to the lens. But with Silent-Wave Motor technology, there is no direct physical drive connection between the body and the lens. Instead, the camera sends a series of electrical impulse through the electrical contacts. These electrical impulses gets translated into movement through the expansion and contraction of piezo crystals. When electical impulse is directed to the piezo crystals, the crystals expands and creates an impulse of movement. Innovative arrangement of the crystals in an efficient structure creates this silent-wave motor, with high-torque drive and precise starting and stopping movement. The end result is an extremely silent, fast and precise autofocus motor. This superior technology is also widely applied in Epson (C) inkjet printers to control the ink output with unrivalled quality among any inkjet printers.

The Silent Wave Motor technology has been incorporated in a series of Nikkor lenses, namely the longer lenses such as the 400mm f/2.8 AF-S and 600mm f/4 AF-S. Three professional-calibre zoom lenses, the 17-35mm f/2.8, 28-70mm f/2.8 and the 80-200mm f/2.8 have also received the AF-S technology. It is widely expected that Nikon will incorporate the AF-S motor in a wider range of lenses in the future. It is widely expected that Nikon will incorporate the AF-S motor in a wider range of lenses in the future, hopefully with a lower price-tag too.

First impressions (build quality) and Handling

I was choked with emotions when I opened up the bulky golden box to reveal this small, compact package of metal and glass. How the hell did something so small cost so much?



The lens is quite heavy for its size, although it is very well-built. Unlike other AFS lenses, this lens is not covered with the armourlite finishing traditionally found on the professional line of Nikkor lenses. Instead, it is sprayed with a plattered black matt paint, which gives it an equally professional look. However, I still feel that the armourlite finishing of the other AF-S lenses gives a better grip on the lenses.

Weighing 745g, the lens is compact yet hefty. The lens is well-balanced on a F90X, and the zooming action and focusing ring is well-dampened. The rings are wide enough for easy gripping, and the zooming ring is ribbed with flat squarish designs for even easier turning. The transparent focusing window is located in-between the metallic AF-S badge, showing you the exact focusing distance (not that it will interest most of us). The aperture ring clicks with precision into place, so setting aperture is a breeze. A aperture lock is provided for locking the aperture at minimum aperture (f/22), for program and shutter-priority mode.

The lens is provided with a lenshood (HB-23) which is petal-shaped and sprayed with the same finish as the rest of the lens. The hood is bayonet mounted to the lens, so mounting and dismounting the hood is a breeze. Looking through the viewfinder with the 17-35mm AFS is a mind-blowing experience, since you can practically see more than 90 degrees across. After a few minutes with the 17mm end, a look through a 28mm lens suddenly seem so limiting!



28-70 AFS

Tokina 28-70 AT-X

17-35 AFS

Sizing off the lenses

The Nikkor 17-35mm f/2.8 AF-S is dwarfed by the Nikkor 28-70mm f/2.8 AFS. The smallest of the trio, the 17-35mm packs a deadly punch in its deceptively compact body.

Features

Because of the internal focus technology, the focusing ring of the 17-35mm AFS doesn't rotate when focusing. This means that you can hold the entire lens without worrying about hindering the AF operation like conventional lenses. In addition to the extra hand-holding area, the internal focus also offers the additional advantage that the lens will not extend its length when focusing. It also means that the front element does not rotate when focusing, making it an ease to use filters such as polarizers and graduated filters.

Like the other AFS lenses, the 28-70mm AFS also features a AF/MF switch. This AF/MF switch allows the user to switch from AF to MF simply by turning the focusing ring while half-depressing the shutter release. This feature is very useful because it allows you to switch seamlessly from AF to MF, without having to press any buttons or operate any switches. Although this feature is more useful in longer lenses where the focusing might be interrupted (as in sports photography), the presence of this feature is nevertheless useful.

The 17-35mm f/2.8 AF-S also features a 9-bladed circular aperture, which merge into a nearly circular aperture to render out-of-focus areas more pleasantly. It is supposed to improve the bokeh of the lens, which I felt was a nice feature, but not really necessary. When using a wide-angle like this lens, depth-of-field is usually quite large and thus good bokeh doesn't always show through.



Close-up capability

The 28cm focusing limit also means that you are able to go very near to subjects for a close-up image. This shot was taken at the 35mm end of the lens, demonstrating the close-up capability of the lens and the sharpness of the optics.

Click on image to see enlarged version.



Minor Irks

Okay, this lens is so darn good, that I really have to split hairs to criticize it.

First of all, I prefer the armourlite finishing on the other AFS lenses. They look more rugged, and they give a better hold on the lens. This lens has a different type of finishing - some sort of splattered paint design. It works okay, but I think the older one is nicer. This new paint looks like it'll scratch more easily.

Secondly, the price is ridiculously high. For the price of one 17-35mm AFS, I could purchase a 18mm, 20mm, 24mm, 28mm and 35mm (all of them AF Nikkors) and have enough money for quite a bit of film. Okay, the lens is very very good indeed, but at that price only professionals and Bill Gates can afford it. That said, if I had the amount of money, I'd get this lens over the series of primes. Who wants to change five lenses in the field?

Finally, the rear lens element is flush with the end of the lens mount, so you should use caution when mounting the lens onto the camera. Be impatient, and you risk slamming the delicate rear lens element onto the stainless steel F-mount. Of course, it is nice to be reminded that the rear lens element is aspherical, and will probably cost you a bomb to replace. The front element is also aspherical, so watch where you swing that lens.

Autofocus

I flipped on the autofocus switch on the camera, and half-depressed the shutter release.

Woah... what the hell just happened?

The focusing was so instantaneous and silent, that I can hardly believe it! The little lens zipped around effortlessly as I pointed it at far and near objects consecutively. Of the three AFS lenses I've tested, this lens is the most responsive and fastest ever. It has probably a lot to do with the focal length of course. Being a wide angle, the depth of field is considerable and the AFS motor has to do a lot less work than a telephoto lens racking from minimum distance all the way to infinity and back. The fact that it is an internal focus design also helped to speed up the already fast autofocus. The lens zipped so quickly and sharply into focus, that you can't help but to be amazed. There is virtually no sound of the AFS in motion. Everything just snaps into focus - like that.

Incredible...



Immerse yourself into the scene with the 17-35mm AFS

The other thing I immediately noticed was how close it can focus. I tried pretty hard (believe me I did) to find a close subject that it would not focus on, but to no avail. It was only when I pointed it at the bookshelf right in front of my face that it hit the limit. I checked with the lens, and saw that the minimum focusing distance for this lens was only 28cm. No wonder it is so amazing! Coupled with the 17mm focal length, the effect becomes absolutely amazing. You could record a wide field of view and everything will be sharp down to the nearest subject (provided you stop down the aperture of course). The close minimum focusing also meant that you could go right beside the subject and use the wide-angle to give prominence to the subject while recording the background as well. This is going to be one hell of a lens for photojournalists!

The AFS lens is able to switch to MF mode seamlessly when interrupted in autofocus mode. Full time manual (FTM) override is activated by turning the focus ring while half-depressing shutter release in AF mode on the camera.

Optical Quality

The Nikkor 17-35mm f/2.8 AF-S IF-ED contains 2 ED elements and 3 aspherical elements! No wonder this lens cost a bomb!

I am still unclear as to why Nikon incorporated ED glass elements into the lens. Traditionally, Extra-low Dispersion (ED) glass is used by lens makers to reduce chromatic aberration in telephoto lenses. Focal length above 100mm have the tendency to exaggerate the defringing colours especially in white areas, and thus low dispersion glass elements are used to focus the different wave-lengths of light back to the same focal point. However, the 17-35mm is hardly a telephoto, and thus it is a mystery as to why Nikon used ED glass.



Click on image to see enlarged version

Clarity and edge-to-edge sharpness

In addition to the ED glass elements, Nikon also used 3 aspherical lens elements to enhance image sharpness when the lens is used wide-open. With such a wide-angle lens, aspherical lens elements greatly improve the optical performance, eliminating coma distortions and other associated aberrations. Looking at the slides taken with the lens, it is clear that the aspherical elements and ED glass played an important role in ensuring the superb quality of the optics.

The lens is extremely sharp and contrasty, giving razor-sharp images from edge to edge. Although the image quality is reasonably good wide-open, for best performance stop down a couple of stop to prevent soft edges from showing up in enlargements. When you get to $f/5.6$ and $f/8$, the lens is incredibly good even at the edges. When you are striving for foreground interest and placing your subjects at the corners, you'll appreciate how good the resolving powers for the corners are.

The flare control is tight, and images with the sun in them fared pretty well. However, for crucial applications use the lenshood HB-23 (provided) at all times. The petal-shaped hood bayonets onto the front of the lens and provide maximum protection. Because the hood is quite shallow (unlike that of the 28-70 and 80-200 AFS), you can reach the filters quite easily.

Ultra-wide angles allow you to go wacky with your perspectives, yet conventional rules of composition still applies. Be creative with your way of looking at subjects!



Click on image to see enlarged version

A word of caution about the use of filters. Personally, I encourage the use of a UV filter whenever possible, despite arguments by some photographers who insist that filters degrade the quality. Whichever camp you belong to, take heed that wide-angle lenses are very particular about the filter thickness. If you need to use filters on a wide-angle lens like the 17-35mm AFS, make sure you do not stack filters, and use thin-rimmed filters wherever possible. Because of the incredible field of view, filters shows up easily as vignetting at the corners. I was using a regular UV filter on the lens, and it never appeared in the image. Use a thicker filter like a polarizer, and that's a different story. I used a regular B+W polarizing filter, and the very corners vignetted slightly. So try to use a thin polarizer (available for some brands) whenever possible on the 17-35 AFS.

Filter tips for the Nikkor 17-35mm AFS

- 1) Use the lenshood as a gauge for the maximum thickness the lens can take without vignetting. The "lowest" corners of the HB-23 lenshood indicates the maximum thickness that the filters can protrude without being "seen" by the lens.
- 2) Watch the sky for uneven polarization when using the polarizer on the 17-35mm AFS. Because the lens cover such a wide area of the sky at 17-20mm, there might be unevenly polarized skies due to the position of the sun. Always check carefully for uneven polarization and vignetting before shooting.

There is very slight light fall-off in the corners, which disappears when stopped down to $f/4$. In most cases, you will not notice the slight fall-off. I am very pleased with the performance of this lens, and it is one lens that I highly recommend to all wide-angle lovers.

Distortions



Slight barrel distortion is seen in this shot taken at the 17mm end. Most ultra-wide angle zooms have slight distortions, and this lens is no exception. There is a slight curvature of the wooden deck if you observe the floor carefully. In most situations, you will not be able to spot the distortions at all.

Competition and Conclusion

There are quite a few lenses in the ultra wide-angle category which competes against the 17-35mm AFS:

Canon came out with a 17-35mm f/2.8 L-series USM lens way before Nikon, and it is a very attractive lens which many photojournalists lust for. It weighs less than the Nikkor counterpart, but it only goes down to 0.42m. There has not been a lab test to compare the results of the two lenses, so I cannot comment on which is better optically. However, the closer minimum focusing distance of the Nikkor will put it slightly ahead of the race.

Due to the introduction of the 17-35mm AFS lens, the older Nikkor 20-35mm f/2.8 has seen a drop in price, and will probably be discontinued. However, it is still an excellent alternative, and available for a much lower price than the AFS lens. As a result, the demand for the 20-35mm Nikkor will still be strong and the presence of the 20-35 will cannibalize the sales of the 17-35mm AFS. For professionals who earn a living with photography, they will perhaps not hesitate to splurge on the 17-35mm AFS, but for the rest of the mere mortals whom photography is only a passion, the 20-35mm Nikkor will be a great alternative... until we can save up enough to lay our grubby hands on the AFS version that is!

There are a couple of ultra-wide angle zooms by third-party manufacturers, but the Tokina AT-X Pro 20-35mm f/2.8 stands out among the crowd. It supposedly gives excellent image quality, and it is highly recommended by nature photographer Moose Peterson. Of course, Moose is on the payroll of the Tokina advertising department, but I believe he has enough integrity not to endorse a product that sucks. As such, the Tokina 20-35mm f/2.8 provides a budget alternative to the Nikkor wide-angle lenses, being half the price of the Nikkor 20-35mm.

So here we have three great lenses for yours truly to consider owning:

- Nikkor 17-35mm f/2.8 AFS
- Nikkor 20-35mm f/2.8 AF
- Tokina 20-35mm f/2.8 AF

The Tokina represents a value-for-money statement here, being the cheapest and most affordable of the lot. The image quality is reportedly good, and the construction is typical of the AT-X series - tough and built to last. The Nikkor 20-35mm falls somewhere in the middle, being twice as expensive as the Tokina but half the price of the AFS lens. It was the hottest ultra wide-angle for Nikon, and while it is being superseded by the AFS, it is still an excellent lens. Especially with the drop in prices, many photographers have purchased one for themselves. You can't go wrong with the 20-35mm f/2.8 Nikkor.

I am a bit ambivalent about the 17-35mm f/2.8 AF-S lens. The price seems so ridiculously high, yet when one handles the lens and sees the razor-sharp results that it produces, it becomes crystal clear why photographers are willing to splurge a fortune to get their hands on it. The AFS is a luxury on this lens, because we probably don't need such a fast motor on a wide-angle, or at least that is what we tell ourselves. But when you squeeze the shutter release halfway and feel the buttery-smooth yet blistering fast AF, you forget all your reasoning and say "yes, I want AFS!". Personally, I wouldn't mind spending on this lens - not for the AFS alone, but for the incredible optics that it offers. I do not usually heap the highest praises on a single product, but this is the finest ultra wide-angle lens around. Even if you have the money, you will still have to join the waiting list for this lens. Demand for the 17-35mm AFS is so high now, you will probably have to wait a few months even if you order it today. Currently, press photographers have priority access to this lens, bundled with the Nikon D1.

Somebody get me the order form please?

Technical Specification

Type of lens: D-type of lens	D-type AF Zoom-Nikkor lens having built-in CPU and Nikon bayonet mount
Focal length	17-35mm
Maximum aperture	f/2.8
Lens construction	10 elements in 13 groups (2 ED elements, 3 aspherical elements)
Focal length scale	17, 20, 24, 28 and 35mm
Distance Information	Output to camera body
Zooming	Manually via separate zoom ring
Focusing	Nikon Internal Focusing (IF) system (utilizing an Internal Silent Wave Motor); manually via separate focus ring
Shooting distance scale	Graduated in meters and feet from 0.28m to infinity
Aperture scale	f/2.8-f/22 on both standard and aperture-direct-readout scales
Minimum aperture lock	Provided
Diaphragm	Fully automatic
Exposure measurement	Via full-aperture method with AI cameras or cameras with CPU interface system; via stop-down method for other cameras
Filter attachment size	77mm
Dimensions	Approximately 82.5mm dia x 106mm
Teleconverter (usable)	TC-201 and TC-14A
Weight	Approx 745g lens only
Lenshood	HB-23 (supplied)

All images and text by Nelson Tan
Copyright (C) 1999



[Post](#) questions on forum

[E-mail](#) comments to author