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# Nikon 300mm f/4 (1987-2000)

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Nikon 300mm f/4 AF. [enlarge](#). Try to find it used [here](#).

June 2008 [newer 300mm f/4 AF-S review](#) [more Nikon reviews](#)

## Introduction

This is a great lens. First I'll praise the unusually good mechanics and then get to the optics.

It was plugged in the March 2000 issue of Outdoor Photographer magazine for its superb performance mated with much smaller size and price in comparison to the 300/2.8. Not bad for a lens introduced in the 1980s and unchanged over its 13-year production life.

Nikon didn't mess around with this gem. The 300/4 AF is built tough, in fact tougher than any other current under - \$2,000 Nikkor lens. Nikon's super-teles used to be tanks, although their AF-s lenses are returning to plastic. This 300 is likely to be the toughest compact 300 AF Nikon will ever make.

It's made almost entirely of metal. If you want SOLID, this is your lens. Even the front lens cover is a fake leather sock with a drawstring, just like Nikon's huge super-telephotos, and has the same drop-in 39mm filter holder. This holder is interchangeable with many other older \$10,000 Nikon super telephotos that take 39mm filters. A second gelatin filter holder and case is included with new lenses.

## Compatibility

As a traditional AF lens, the Nikon AF 300mm f/4 works on a broader range of Nikon cameras than any other kind of lens. Except that it won't autofocus on the [D40](#), [D40x](#), or [D60](#) and that you'll have to have an AI coupling prong added to the aperture ring for coupled metering with antediluvian Nikons made from 1959 - 1976, this lens works perfectly with every Nikon ever made since 1977.

See [Nikon Lens Compatibility](#) for details on your camera. Read down the "AF, AF-D (screw)" column for this lens.

## History

Nikon introduced this 300mm f/4 AF in 1987 in response to people who complained about Nikon's first plasticity AF lenses, which were introduced to go with the very amateur N2020 camera.

In late 2000 Nikon replaced this with an [AF-S version](#). I have not photographed with the AFS lens, however it seems potentially superior in every way, especially since it focuses down to 5 feet (1.5m).



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Nikon 300m f/4 AF. [enlarge.](#)

## Specifications



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Identification Plate, Nikon 300mm f/4 AF.

**Optics:** 8 elements in 6 groups. Multicoated. 2 ED elements

**Close Focus:** 9 feet or 2.5m.

**Depth-of-Field Scale:** Only for f/32.

**Infra-Red Focus Index:** No.

**Diaphragm:** 9 straight blades. Stops down to f/32.

**Front Cap:** [Phony leather cap](#), just like the huge Nikkor telephotos. A [replacement costs \\$40!](#) (UPC symbol 18208 || 00596.) There is no conventional snap-in plastic 82mm cap from Nikon. The rear cap is the same as every other Nikon lens.

**Filters:** 82mm front thread. 39mm internal filter holder. The Nikon part number for a 39mm NC clear filter (only) is 2478NASI, and is 2256 for a 39mm A12.

**Hood:** Built-in telescoping hood.

**Tripod Collar:** Permanently attached.

**Size:** It is 3.5" (89mm) around by 8.6" (219mm) long.

**Weight:** 2 pounds, 15 oz (1330 g).

## Internal 39mm Filter Holder



Nikon 300mm f/4 AF with 39mm filter holder.



**Nikon Drop-in 39mm Filter Holder.** The filters screw into this holder, which pops into the lens.

The internal filter should remain in place because the presence or absence of the filter changes the effective (optical) distance to the film plane by a tiny amount. Don't worry about this, but please leave the filter holder in place.

The change in effective path length is the thickness of the filter x ([the filter glass' index of refraction] - 1 ). A typical index of refraction is about 1.5, so you change the effective distance to the film by about half the thickness of the filter. Of course the same effect happens with filters in front of your lens, but no one notices when you change the distance to a subject by a millimeter. In lens design, moving the film plane a mm can make a difference, but not much with telephotos.

You can confirm this effect if you focus on a distant object and note the indication on the focus scale. Now remove the internal filter, refocus, and you will note that the focus scale indicates a different distance when

focused on the same object.

So do you care? To be honest, it is a very subtle change and probably not worth worrying about unless you are the guy who designed the lens and take it personally. On the other hand, there is no better place to leave your 39mm filter than safe and sound inside your 300mm. The lens was designed expecting to have the internal filter in place. Of course if you use the internal gel holder then you also are not optimizing the operation of the lens, but that's insignificant compared to the significant effect of the reason you have chosen a special gel filter in the first place.

The effects of a front mounted filter have nothing to do with the performance of the lens or presence or absence of the internal filter, beyond of course the two colors adding together.

## Performance

This is an excellent lens optically as well as mechanically.

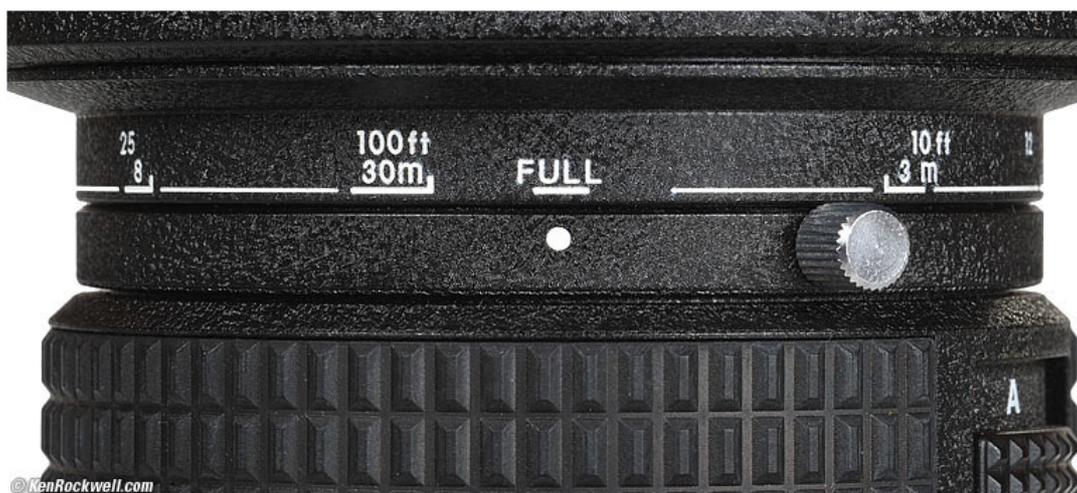
### Focus



Nikon 300mm f/4 AF Focus Window.

### AF Speed

AF speed is on the slow side on my F100. It is a mechanically focused lens. It will probably be slower on more primitive cameras. One full turn of the AF screw focuses the lens from infinity to 95 feet.



Nikon 300mm f/4 Focus Limiter.

The focus limiter is continuously variable. You may choose any near or far distance as a limit. One of the limits is always either infinity or the close limit of 9' or 2.5m.



**Nikon 300mm f/4 Focus Limiter and AF/MF Switch.**

It's more of a pig than most Nikkors to switch between AF and MF. Unlike an AF-S or a Canon lens, you have to move TWO switches to do this! This is the main advantage of the [AF-S 300 f/4](#) over this lens.

Not only do you have to move the switch on the camera, but you also have to move the big klunky switch on the lens focus ring itself. If you leave the lens' focus mode selector set to MF, then the big fat manual focus ring rotates as the camera tries to AF. This makes it tougher for the camera, and also makes it likely that you'll accidentally disturb the ring while the camera is trying to focus.

## Color Rendition

I have seen different color rendition between samples. This is confirmed by looking at the coloration in the reflections off the lens elements: the multicoating can vary between samples.

My first sample was a few CC too green, so I corrected this by using an 82mm Tiffen 812 filter on the front all the time instead of a Nikon A2. The 812 subtracts a little green.

## Distortion

Like most fixed telephoto lenses, there is no visible distortion.

If you try to find distortion deliberately, you'll see only the tiniest amount of pincushion. It doesn't vary with distance. If you want to correct it perfectly, use a value of of -0.45 in [Photoshop CS2's lens distortion filter](#) to correct the distortion on a full-frame or [FX](#) camera. Forget about it on [DX](#).

## Falloff

There's some falloff at f/4, almost no falloff at f/5.6 and none at f/8.

## Ghosts

Used with an uncoated Tiffen filter I get a slight mirror-image ghost at f/5.6, and none at f/11.

## Sharpness

It's sharp! I can't see any significant variation in sharpness regardless of position in the full FX frame or f/stop.

## Teleconverters

Used with the [TC-200](#) it is not quite as sharp as a [Nikkor 600mm f/5.6 ED-IF AI-s](#), but that's to be expected. It's certainly not bad at all, and if you don't already have a 600mm lens, go for it!

Nikon makes no AF teleconverters for this lens. See [Teleconverters](#) for more.

**VR** (Image Stabilization)

It has no VR, but here are the percentage of shots which I can get at 100% tripod-equivalent sharpness, as viewed at 100% on-monitor, hand-held on an [FX](#) camera at 12MP. I explain these ratings at [Why VR Matters](#). I get the same results on [Fuji Velvia](#) on my [F100](#).

1/30	1/60	1/125	1/250	1/500
10%	15%	50%	80%	100%

Since I get perfectly sharp shots 50% of the time at 1/125, and the formula says this ought to happen at 1/300, that gives me a 1-1/3 stops improvement. Marketing is funny; marketing people would tell you the Nikon 300mm f/4 AF has a 1-stop improvement over a non-VR lens. Heh heh. It does this well because I hold cameras well, and because its heavy front element helps stabilize the system.



Nikon 300mm f/4 AF. [enlarge](#).

## Recommendations

This 300mm has superb optics and moderate speed. I'd get it for shooting careful landscapes where optical quality is one's only concern.

For most people, the [70-300mm VR](#) sells new for less money in 2008 than this lens sells for used, and the 70-300mm VR is a far more useful lens for most people, especially for sports and action. The new VR lens offers zooming, faster AF, instant manual focus override and VR so you can skip the tripod. For still subjects, the VR of the 70-300mm VR will let one shoot in lower light than the extra stop offered by this 300mm f/4.

If buying used make sure to get the case, 39mm filter and holder and front cap it came with. Watch out if you buy a used one and there is no cap, I'm sure Nikon gets \$40 for this special cap. Also make sure to check the diaphragm blades from the rear because they are naked inside. Make sure you get a 39mm filter attached inside the internal filter holder. The lens also probably ships with a gel filter holder that goes in the same place that the 39mm filter holder goes, so make a stink if you look at one that's missing that.

I leave the hard original Nikon case at home, and instead carry this 300mm around in a Lowepro "Street & Field" lens case #4.

I have only once played with the new (introduced in 2000) [300mm f/4 AF-S](#) lens that sells for \$1,100. If the optics are as good, it looks like the new lens is slightly bigger but otherwise better on all fronts. The AFS takes the smaller and more common 77mm filters, has a locking built in hood, has all the advantages of fast AFS focusing, is made of manly metal and not crappy plastic and most importantly, focuses as close as 5 feet (1.5m). Cost aside, I want to get the AFS lens for evaluation.

### On Digital

This is a great choice for FX cameras like the [D3](#), [D3X](#) and [D700](#).

This 300mm doesn't autofocus on the [D40](#), [D40x](#), or [D60](#).

### On Film

I focus this lens by running my F100 with the custom function set so that the camera focuses ONLY when I press the AF button. This way I don't have to keep messing with two switches on both the lens and camera to change from AF to MF.

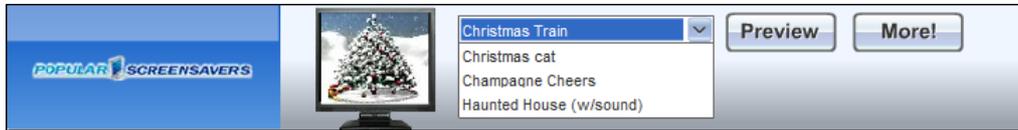
I usually shoot it at f/4; I shoot slow 50 speed film and need all the light I can get.

Here are animal photos I've made with the lens [bullfrog](#) and [dragonfly](#). These were cropped. The 300/4 only focuses to 9'; I wish it focused closer as I'm always at the stop when photographing little animals with it.

Hand held on my F100 it's sharp half the time at 1/100 of a second.

With the F100 on a tripod with no bean bags or other damping it's sharp down to 1/30. The F100's vibration due to the crippling lack of mirror lockup (called the "Nikon Recoil" by Canon fans) means you can't use the lens between 1/15 and 1/8 of a second. It's so-so at 1/4 and 1/2, and by 1 second or longer most of the vibration has damped out for most of the exposure time so your results can be OK, unless you have bright points of light in the image that will record a smear.

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The screenshot shows a website interface for selecting a screen saver. On the left, there is a blue banner with the text "POPULAR SCREENSAVERS". In the center, there is a small image of a Christmas tree on a monitor. To the right of the image is a dropdown menu with "Christmas Train" selected. Below the dropdown menu, there are three options: "Christmas cat", "Champagne Cheers", and "Haunted House (w/sound)". To the right of the dropdown menu are two buttons: "Preview" and "More!".