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# NIKKOR

*At the heart of the image*

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En



# NIKKOR Lenses — Seamless Performance, Absolute Precision, and Total Reliability

When it comes to choosing photographic equipment, perhaps the most important decision a photographer faces is which lens system to use. For the majority of professional photographers, that choice is simple: Nikon. Why? Because NIKKOR lenses offer unrivalled clarity, sharpness, focusing accuracy, range and reliability.

The reasons for this are many, not the least of which is

Nikon's total commitment to controlling every aspect of lens manufacturing. By selecting only the finest raw materials and employing the most advanced processing and design techniques, Nikon produces the precision-crafted lens elements that help you take the world's greatest pictures.

This no-compromise attitude toward ultrahigh-tech manufacturing extends to performance. For each NIKKOR lens is

designed to function seamlessly with Nikon SLRs in a synergy of purpose that is simply unparalleled. This is exemplified most clearly in the legendary Nikon F mount. For even the most advanced NIKKOR lenses incorporate this standard that has won over decades of devotees for its consistency and reliability. This design also ensures that when we release revolutionary cameras like the Nikon F6, D3 and D300 with features

such as 3D Colour Matrix Metering and i-TTL Balanced Fill-Flash, you can be sure to find an array of NIKKOR lenses that can handle these advances too.

Once you see for yourself how smoothly the Nikon-NIKKOR combination works, chances are you'll do what most of the world's professional photographers do — **when you reach for a lens, it'll be a NIKKOR.**

## DX NIKKOR Lenses

Pp. 8-11

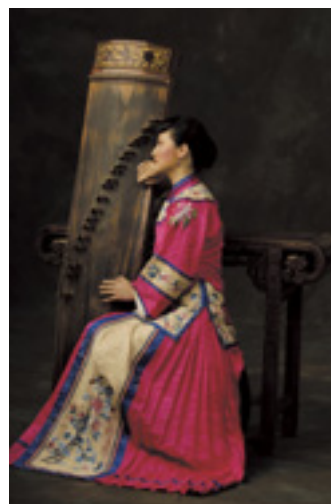
DX NIKKOR lenses, designed exclusively for use with Nikon DX-format digital SLRs, offer digital photographers unprecedented creative potential.



## Fisheye & Wide angle & Normal NIKKOR Lenses

Pp. 18-21

Wideangle AF NIKKOR lenses, including AF Fisheye NIKKOR, provide superior depth of field and fast apertures for photojournalism and travel. There are also Normal AF NIKKOR lenses for a natural perspective for diverse applications, from landscapes to candid shots.



## Zoom-NIKKOR Lenses

Pp. 12-17

Provide both versatility and portability for every type of photographer from beginners to pros for every moment.



## Telephoto NIKKOR Lenses

Pp. 22-25

Telephoto AF NIKKOR lenses, including AF DC-NIKKOR lenses, AF-S NIKKOR lenses, and AF-S Teleconverters, create dramatic sports, wildlife, portrait photographs and everything in between. AF DC-NIKKOR lenses offer creative focusing control for exceptional portraits.



## Manual-focus Lenses

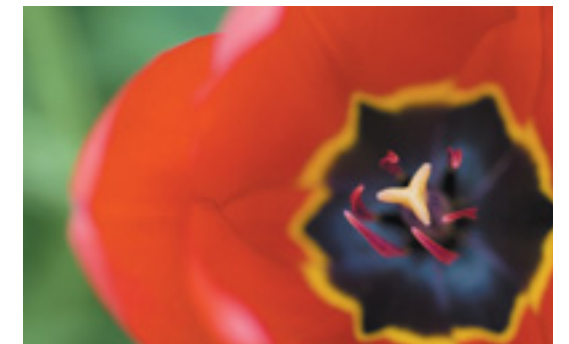
Pp. 32-33

A versatile and unique selection of manual focus lenses.

## Micro-NIKKOR Lenses

Pp. 26-27

For absolute clarity and sharpness of detail for close-up photography.



## PC-E NIKKOR Lenses

Pp. 28-29

Equipped with a tilt/shift mechanism for manipulating image perspective, distortion and focus.



## Accessories

Suggested equipment combinations, and accessories for NIKKOR lenses.

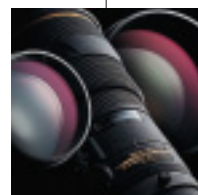
P. 35



## A history of exceptional performance —

**NIKKOR lenses** Nikon began producing lenses under the NIKKOR name in 1933, and since then more than 40 million lenses have been sold worldwide. Throughout the years, our unwavering commitment to quality and innovation has yielded many breakthroughs in the photographic industry. For example, Nikon introduced the Nikkor Auto 24mm f/2.8 incorporating Nikon-pioneered **Close-Range Correction (CRC) system** in 1967, and started production of **aspherical lenses** in 1968. In addition, Nikon developed **ED (Extra-low Dispersion) glass** which made its first appearance in the 300mm f/2.8 ED Nikkor telephoto in 1972, and is now incorporated in many other NIKKOR lenses. And in 2003, Nikon produced the **AF-S DX Zoom-Nikkor 12-24mm f/4G IF-ED**, as the first lens optimised for Nikon DX-format digital SLRs in the new DX NIKKOR series.

These are just a few of the many achievements in lens design that exemplify Nikon's position as the world's preeminent manufacturer of professional photographic equipment. The following offers in-depth technical information that will help you understand more fully that **NIKKOR lenses provide superior performance and are thus the best match for your Nikon SLR.**



Optical glass raw materials

improved overall lens design and ensuring the superior performance of the finished product.

### Electronics — microcomputer innovation for precise performance

The recent advances in the computer industry play an integral role in the makeup as well as design of NIKKOR lenses. For in addition to superior optics, each AF NIKKOR features a built-in microcomputer. This microcomputer works with the Nikon AF camera computer system to provide information that ensures fast autofocus, Matrix exposure metering,

ensures that your Nikon camera is compatible with most NIKKOR lenses and that your Nikon equipment can accommodate future system advances.

Moreover, the F mount achieves something no other design can — it is compatible with both types of lens drive systems — the conventional mechanical AF coupling design for wideangle and standard zooms, and Nikon's exclusive SWM (Silent Wave Motor) system featured in the most advanced supertelephoto NIKKOR lenses. This is just one example why the Nikon F

perature-resistance analysis. One of these tests concerns the lens' Optical Transfer Function (OTF), which evaluates the resolving power and contrast of the lens. To perform this test, Nikon developed the exclusive Nikon OTF Analyser (NOA).

In addition to these uncompromising tests, Nikon technicians further guarantee the performance of the final product by going over every detail of every finished lens. They check and assure the mechanical construction, electronics, AF movement, zoom and aperture mechanisms, and lens resolution.



Optical design using computer

Inspecting glass blocks

Coating lenses

Adjusting optical axis

Inspecting resolution

### Where it all begins — Nikon glassworks

To make the finest lens elements, you must begin with the finest optical glass. To ensure this, Nikon does what few makers can — it manufactures the glass for nearly all NIKKOR lenses in its own glassworks. This means our lens designers have over 200 types of glass to choose from, giving them an exceptional variety from which to select just the right optical glass for their requirements.

Moreover, when these requirements demand lens properties not yet available, the glass technicians work to find a solution — which often results in engineering new

types of glass. This is precisely how Nikon developed Extra-low Dispersion (ED) glass in 1972 — to meet design demands for super-telephoto NIKKOR lenses.

### Lens construction

The peerless craftsmanship of NIKKOR lens elements is matched by the structures that house them. Only the best materials are used for the mechanical construction of each lens. Fine metal alloys and polycarbonates make up the helicoids in some lenses. Inner and outer sleeves are tooled with maximum precision, resulting in the smooth lens movement that characterises

the NIKKOR lens. The lens mount, too, features similar materials.

### Computers and lens design

Nikon designers employ the latest computers and Nikon-developed software to determine the optical design of each lens. Using this data together with their accumulated experience, they create the finest SLR lenses available.

Computer-aided design simulation is also used to ensure the utmost precision in the optical and mechanical parts of each lens as well as the quality of the lens assembly process. In this way, computers can identify problematic areas thus leading to

Balanced Fill-Flash, and other Nikon innovations in SLR performance.

Only NIKKOR lenses are designed for today's and tomorrow's Nikon SLR cameras, based on information and insight available exclusively within Nikon — including autofocus parameters. No other lens maker can provide this type of assurance.

### The Nikon F lens mount — a tradition of continuity and forward compatibility

The debut of the original Nikon F also marked the introduction of what is perhaps its most significant technological innovation — the Nikon F lens mount. This legendary design

mount continues to be an integral part of Nikon camera equipment design.

### Reliability — lenses made to withstand the toughest conditions

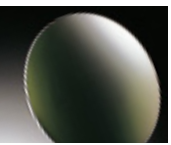
Each NIKKOR lens is manufactured to meet the most stringent requirements in the industry. The optical glass is scrutinised to assure it is free of imperfections, whereupon it is then remelted, cast, ground, polished and hard-coated to emerge as one of the world's finest lens elements. After being precisely mounted in lens barrels, the lens elements and their assemblies undergo a battery of tests and inspections, including vibration and tem-

All of which ensures that the lens does what it's supposed to — provide the outstanding optical performance and reliability that make NIKKOR lenses the pro's choice the world over.



## Designed to be the best lenses in the world

### ED glass — an essential element of NIKKOR telephoto lenses



ED glass

Nikon developed ED (Extra-low Dispersion) glass to enable the production of lenses that offer superior sharpness and colour correction by minimising chromatic aberration.

Put simply, chromatic aberration is a type of image and colour dispersion that occurs when light rays of varying wavelengths pass through optical glass. In the past, correcting this problem for telephoto lenses required special

ness and contrast even at their largest apertures. In this way, NIKKOR's ED-series lenses exemplify Nikon's pre-eminence in lens innovation and performance.

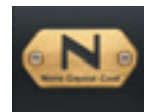
### Nikon Super Integrated Coating ensures exceptional performance

To enhance the performance of its optical lens elements, Nikon employs an exclusive multilayer lens coating that helps reduce ghost and flare to a negligible level.

Nikon Super Integrated Coating achieves a number of objectives, including min-

### Nano Crystal Coat

Nano Crystal Coat is an anti-reflective coating that originated in the development of NSR-series (Nikon Step and Repeat) semiconductor manufacturing devices. It virtually eliminates internal lens element reflections across a wide range of wavelengths, and is particularly effective in reducing ghost and flare peculiar to ultra-wideangle lenses. Nano Crystal Coat employs multiple layers of Nikon's outstanding extra-low refractive index coating, which features ultra-fine crystallized particles



Nikon employs three types of aspherical lens elements. **Precision-ground** aspherical lens elements are the finest expression of lens-crafting art, demanding extremely rigorous production standards. **Hybrid** lenses are made of a special plastic moulded onto optical glass. **Moulded glass** aspherical lenses are manufactured by moulding a unique type of optical glass using a special metal die technique.

### Close-Range Correction system

The Close-Range Correction (CRC) system is one of

optical movement is limited to the interior of the nonextending lens barrel. This allows for a more compact, lightweight construction as well as a closer focusing distance. In addition, a smaller and lighter focusing lens group is employed to ensure faster focusing. The IF system is featured in most NIKKOR telephoto and selected NIKKOR zoom lenses.

### Rear Focusing (RF)

With Nikon's Rear Focusing (RF) system, all the lens elements are divided into specific lens groups, with only the

AF Nikon camera bodies. This then makes possible advances like 3D Matrix Metering and 3D Multi-Sensor Balanced Fill-Flash.

Note: D-type and G-type NIKKOR lenses provide distance information to the following cameras: Auto exposure: F6, F5, F100, F90X, F80, F75, F70, F65, F60, F55, F50, PRONEA S, PRONEA 600i, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40. Flash control: F6, F5, F100, F90X, F80, F75, F70, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40.

### Silent Wave Motor

Nikon's AF-S technology is yet another reason professional photographers like

stops faster.\* It allows handheld shooting at dusk, at night, and even in poorly lit interiors. The lens' VR system also detects automatically when the photographer pans — no special mode is required.

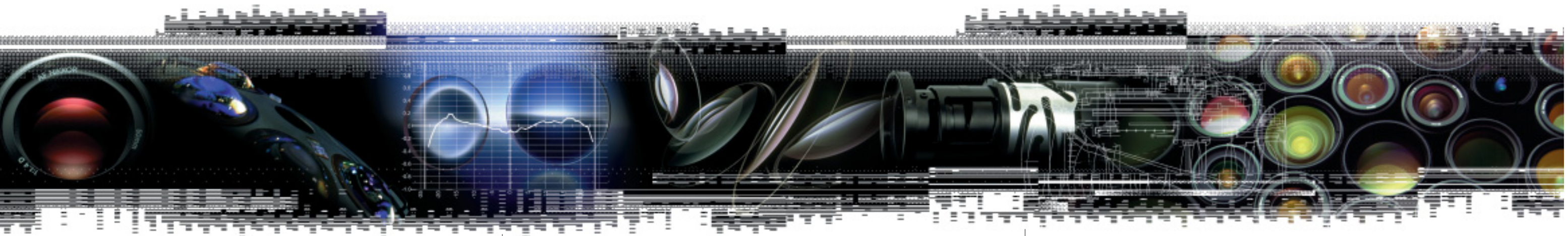
\* As determined by Nikon performance tests.

### DX NIKKOR

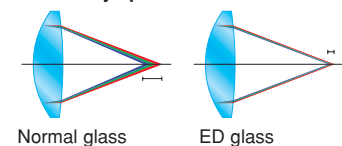
Compact and lightweight DX Nikkor lenses featuring a smaller image circle are spe-



VR lens unit



### Secondary spectrum



optical elements that offer anomalous dispersion characteristics — specifically calcium fluoride crystals. However, fluoride easily cracks and is sensitive to temperature changes that can adversely affect focusing by altering the lens' refractive index.

So Nikon designers and engineers put their heads together and came up with ED glass, which offers all the benefits, yet none of the drawbacks of calcium fluoride-based glass. With this innovation, Nikon developed several types of ED glass suitable for various lenses. They deliver stunning sharp-

ness and contrast even at their largest apertures. In this way, NIKKOR's ED-series lenses exemplify Nikon's pre-eminence in lens innovation and performance. It is also effective in minimising ghost and flare caused by internal reflections from the image sensors of Nikon digital SLRs.

Also, Nikon's multilayer coating process is tailored to the design of each particular lens. The number of coatings applied to each lens element is carefully calculated to match the lens type and glass used, and also to assure the uniform colour balance that characterises NIKKOR lenses. This results in lenses that meet much higher standards than the rest of the industry.

of nano size (one nanometer equals one millionth of a mm). Nikon now proudly marks a world first by applying this coating technology to a wide range of lenses for use in consumer optical products.

### Aspherical lens elements

Nikon introduced the first photographic lens with aspherical lens elements in 1968. What sets them apart? Aspherical lenses virtually eliminate the problem of coma and other types of lens aberration — even when used at the widest aperture. They are particularly useful in correcting the distortion in wideangle lenses. In addition, use of aspherical lenses contributes to a lighter and smaller lens design.

Nikon's most important focusing innovations, for it provides superior picture quality at close focusing distances and increases the focusing range.

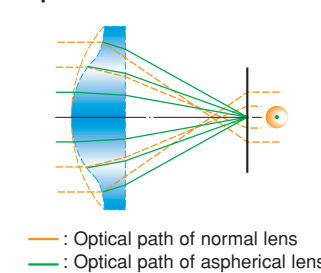
With CRC, the lens elements are configured in a "floating element" design wherein each lens group moves independently to achieve focusing. This ensures superior lens performance even when shooting at close distances.

The CRC system is used in fisheye, wideangle, Micro, and selected medium telephoto NIKKOR lenses.

### Internal Focusing (IF)

Imagine being able to focus a lens without it changing in size. Nikon's IF technology enables just that. All internal

### Aspherical lens

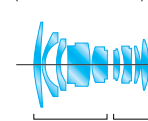


— : Optical path of normal lens  
— : Optical path of aspherical lens

Aspherical lens elements

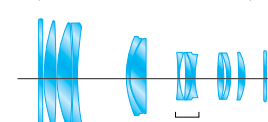
Cam for zoom mechanism

### CRC (AF 24mm f/2.8D)



### Focusing lens groups

#### IF (AF-S 300mm f/2.8D IF-ED II)



#### RF (AF DC 135mm f/2D)



rear lens group moving for focusing. This makes autofocus operation smoother and faster.

### AF DC-NIKKOR lenses — unique NIKKOR lenses for unique portraits

AF DC-NIKKOR lenses feature exclusive Nikon Defocus-image Control technology. This allows photographers to control the degree of spherical aberration in the foreground or background by rotating the lens' DC ring. This will create a rounded out-of-focus blur that is ideal for portrait photography. No other lenses in the world offer this special technique.

### Distance information

D-type and G-type Nikkor lenses relay subject-to-camera distance information to

NIKKOR telephoto lenses. AF-S NIKKOR lenses feature Nikon's SWM which converts "travelling waves" into rotational energy to focus the optics. This enables smooth autofocus that's extremely accurate and super quiet.

### M/A mode

AF-S NIKKOR lenses feature Nikon's exclusive M/A mode, that allows switching from autofocus to manual operation with virtually no time lag — even during AF servo operation and regardless of AF mode in use.

### Vibration Reduction (VR)

This innovative VR system minimises image blur caused by camera shake, and offers the equivalent of shooting at a shutter speed four or three

cially designed and optimised for Nikon D2-series, D1-series, D300, D200, D80, D100, D70S/D70, D60, D50 and D40X/D40 digital SLR cameras. These are ideal options for landscape photographers and others who need to shoot expansive scenes with Nikon DX-format digital SLRs.

Note: We do not recommend use of DX Nikkor with 35mm (135) or IX240 format cameras.



SWM

# DX NIKKOR Lenses



AF DX Fisheye-Nikkor 10.5mm f/2.8G ED



AF-S DX Zoom-Nikkor 12-24mm f/4G IF-ED

## DX NIKKOR lenses — distinguishing features

The newest addition to Nikon's world-class NIKKOR lens lineup, the DX NIKKOR series was developed in response to the demands of professional and advanced amateur digital SLR users for higher optical performance. The popularity of Nikon's digital SLRs has risen significantly, and Nikon has answered with the kind of innovation you'd expect from a world leader in optical technology.

Nikon created the DX NIKKOR series to provide Nikon DX-format digital SLR owners with **greater wideangle covering power**. Mounting a 35mm format 14mm wideangle lens, for example, onto a digital camera would result in a picture angle equivalent to that of a 21mm lens — negating the benefit of wideangle coverage. DX NIKKOR, the first interchangeable lenses designed **specifically for use with Nikon DX-format digital SLRs**, give owners wideangle shooting capability in a compact, lightweight package.

Nikon offers eleven DX NIKKOR lenses—**various Zoom-NIKKOR lenses and the 10.5mm Fisheye**—to cover a range of shooting situations. In addition to lenses with popular zoom ranges, the lineup includes newer zoom lenses with **telephoto ranges that extend up to 200mm** (equivalent to 300mm in 35mm format). The 18-200mm lens offers an astonishing **11.1x zoom power**.

**Note:** We do not recommend use of DX NIKKOR lenses with 35mm (135) or IX240 format cameras.

### AF DX Fisheye-Nikkor 10.5mm f/2.8G ED\* ED D SC DX



**Frame-filling fisheye lens for exclusive use with Nikon digital SLR**

- Full-frame fisheye images with a picture angle of 180° (diagonal)
- ED glass elements
- Focuses down to 0.14m/0.46 ft.

■: ED glass elements  
■: Aspherical lens elements



Lens construction: 10 elements in 7 groups  
Closest focusing: 0.14m/0.46 ft.  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 16mm Filter attachment size: Rear-attachment type □27mm Hood: Built-in Dimensions: 63 x 62.5mm Weight: 305g

### AF-S DX Zoom-Nikkor 12-24mm f/4G IF-ED\* (2.0x) ED ASP IF D SWM M/A SC DX



**Ultra-wideangle zoom lens for exclusive use with Nikon digital SLR**

- Aspherical lenses and ED glass elements
- Built-in SWM for accurate, ultra-quiet operation
- M/A mode for quick switching between autofocus and manual operation
- Lightweight and compact design



Lens construction: 11 elements in 7 groups  
Closest focusing: 0.3m/1 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 18-36mm Filter attachment size: 77mm Hood: HB-23 (provided) Dimensions: 82.5mm x 90mm Weight: 465g

### AF-S DX NIKKOR 16-85mm f/3.5-5.6G ED VR\* (5.3x) ED ASP IF D SWM M/A SC VR DX



**Wideangle zoom lens with VR II for exclusive use with Nikon digital SLRs**

- VR II operation offers the equivalent of using a shutter speed 4 stops faster\*\*
- Built-in SWM for accurate, ultra-quiet operation
- Two ED glass elements and three aspherical lenses
- Seven-blade rounded diaphragm



Lens construction: 17 elements in 11 groups  
Closest focusing: 0.38m/1.3 ft. Picture angle with Nikon DX format:

35mm (135) format equivalent to 24-127.5mm Filter attachment size: 67mm Hood: HB-39 Dimensions: Approx. 72 x 85mm Weight: Approx. 485g

### AF-S DX Zoom-Nikkor 17-55mm f/2.8G IF-ED\* (3.2x) ED ASP IF D SWM M/A SC DX



**Wideangle zoom lens for exclusive use with Nikon digital SLR**

- Aspherical lenses and ED glass elements
- Built-in SWM for accurate, ultra-quiet operation
- M/A mode for quick switching between autofocus and manual operation
- Lightweight and compact design



Lens construction: 14 elements in 10 groups  
Closest focusing: 0.36m/1.2 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 25.5-82.5mm Filter attachment size: 77mm Hood: HB-31 (provided) Dimensions: 85.5 x 110.5mm Weight: 755g

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body.

Note: VR operation works with the Nikon D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40.

**AF-S DX NIKKOR 18-55mm f/3.5-5.6G VR\* (3.0x)** ASP D SWM SC VR DX



**Compact zoom lens for exclusive use with Nikon digital SLRs**

- VR operation offers the equivalent of using a shutter speed 3 stops faster\*\*
- Built-in SWM for accurate, ultra-quiet operation
- Focuses as close as 0.28m/0.9 ft.
- Nine-blade rounded diaphragm

\*\* As determined by Nikon performance tests.



Lens construction: 11 elements in 8 groups  
Closest focusing: 0.28m/0.9 ft.  
Picture angle with Nikon DX format: 35mm (135)

format equivalent to 27-82.5mm Filter attachment size: 52mm Hood: HB-45  
Dimensions: Approx. 73 x 79.5mm  
Weight: Approx. 265g

**AF-S DX Zoom-Nikkor 18-55mm f/3.5-5.6G ED II\* (3.0x)** ED ASP D SWM SC DX



**Affordable wideangle zoom lens for exclusive use with Nikon digital SLRs**

- Ultracompact and light (205g)
- Aspherical lens and ED glass elements
- Newly developed, compact SWM
- Focuses as close as 0.28m/0.9 ft.



Lens construction: 7 elements in 5 groups  
Closest focusing: 0.28m/0.9 ft.  
Picture angle with Nikon DX format: equivalent to 27-82.5mm in 35mm (135) format  
Filter attachment size: 52mm Hood: HB-45  
Dimensions: 70.5 x 74mm Weight: 205g

**AF-S DX Zoom-Nikkor 18-70mm f/3.5-4.5G IF-ED\* (3.8x)** ED ASP IF D SWM M/A SC DX



**High-power wideangle zoom lens for exclusive use with Nikon digital SLR**

- Aspherical lens and ED glass elements
- Built-in SWM for accurate, ultra-quiet operation
- M/A mode for quick switching between autofocus and manual operation
- Lightweight and compact design



Lens construction: 15 elements in 13 groups  
Closest focusing: 0.38m/1.2 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 27-105mm

Filter attachment size: 67mm Hood: HB-32 (provided) Dimensions: 73 x 75.5mm  
Weight: 390g

**AF-S DX Zoom-Nikkor 18-135mm f/3.5-5.6G IF-ED\* (7.5x)** ED ASP IF D SWM SC DX



**A high-power zoom lens with SWM for exclusive use with Nikon digital SLRs**

- Built-in SWM for accurate, ultra-quiet operation
- Aspherical lenses and ED glass element
- Seven-blade rounded diaphragm
- High-power 7.5x zoom lens



Lens construction: 15 elements in 13 groups  
Closest focusing: 0.45m/1.5 ft. Picture angle with Nikon DX format: 35mm (135)

format equivalent to 27-202.5mm Filter attachment size: 67mm Hood: HB-32  
Dimensions: 73.5 x 86.5mm Weight: 385g

**AF-S DX VR Zoom-Nikkor 18-200mm f/3.5-5.6G IF-ED\* (11.1x)** ED ASP IF D SWM M/A SC VR DX



**High-power zoom lens with VR II for exclusive use with Nikon digital SLRs**

- VR II offers the equivalent of a shutter speed 4 stops faster\*\*
- Two ED glass elements
- Built-in SWM for accurate, ultra-quiet operation
- M/A mode for quick switching between autofocus and manual operation
- Seven-blade rounded diaphragm

\*\* As determined by Nikon performance tests.



Lens construction: 16 elements in 12 groups  
Closest focusing: 0.5m/1.6 ft. Picture angle with Nikon DX format: equivalent to 27-

300mm in 35mm (135) format Filter attachment size: 72mm Hood: HB-35 (provided)  
Dimensions: 77 x 96.5mm Weight: 560g

**AF-S DX VR Zoom-Nikkor 55-200mm f/4-5.6G IF-ED\* (3.6x)** ED IF D SWM SC VR DX



**Affordable zoom lens with VR for exclusive use with Nikon digital SLRs**

- VR offers the equivalent of a shutter speed 3 stops faster\*\*
- Newly developed, compact SWM
- An ED glass element helps minimise chromatic aberration
- Seven-blade rounded diaphragm

\*\* As determined by Nikon performance tests.



Lens construction: 15 elements in 11 groups  
Closest focusing: 1.1m/3.6 ft. Picture angle with

Nikon DX format: equivalent to 82.5 - 300mm in 35mm (135) format Filter attachment size: 52mm Hood: HB-37  
Dimensions: 73 x 99.5mm Weight: 335g

**AF-S DX Zoom-Nikkor 55-200mm f/4-5.6G ED\* (3.6x)** ED D SWM SC DX



**Affordable high-power zoom lens for exclusive use with Nikon digital SLRs**

- Ultracompact and light (255g)
- Two ED glass elements
- Newly developed, compact SWM
- Nine-blade rounded diaphragm



Lens construction: 13 elements in 9 groups  
Closest focusing: 0.95m/3.1 ft. Picture angle with

Nikon DX format: equivalent to 82.5-300mm in 35mm (135) format Filter attachment size: 52mm Hood: HB-34 (provided) Dimensions: 68 x 79mm  
Weight: 255g

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body.

Note: VR operation works with the Nikon D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40.



AF-S DX VR Zoom-Nikkor 18-200mm f/3.5-5.6G IF-ED © Tim Andrew

■: ED glass elements  
■: Aspherical lens elements

# Zoom- NIKKOR Lenses



AF-S NIKKOR 24-70mm f/2.8G ED © Matthias Klum

## AF Zoom-NIKKOR lenses— distinguishing features

Nikon offers over a dozen AF Zoom-NIKKOR lenses, all of which are outstanding. The information below will give you a better idea of which lenses are most suitable for you.

The most obvious starting point when considering a zoom lens is **focal length**, for that will determine your range of usage. Need a great standard zoom for the wideangle to medium telephoto range? For greater wideangle coverage, the **14-24mm**, **17-35mm** and **18-35mm** are favourites of landscape photographers and others who need to shoot expansive scenes. Then there are the more powerful lenses like the **70-300mm** or **80-400mm**. These are ideal for sports and action photography, and for taking shots of people from a distance. And for truly high-power zoom needs, the **24-120mm** lens offers 5x ratio. Not only is this lens versatile, this is compact as well.

The **speed**, or maximum aperture that a lens offers is another crucial factor. There are several AF Zoom-NIKKOR lenses in the wide, medium and powerful telephoto range with a fast f/2.8 that are sure to fit your demands. The **AF-S 14-24mm**, **AF-S 17-35mm**, **AF-S 24-70mm**, **AF-S 28-70mm** and **AF-S VR 70-200mm** are all perfectly suited for handheld shooting in dim light.

**Macro focusing** is another feature that most AF Zoom-NIKKOR lenses offer. Those lenses with the highest reproduction ratios are the **24-85mm f/2.8-4D IF (1/2)**, and the **VR 70-200mm f/2.8G IF-ED (1/3.7)**.



AF Zoom-Nikkor 18-35mm f/3.5-4.5D IF-ED © Steven Yee Pui Chung

- Nano Crystal Coat
- ED glass elements
- Aspherical lens elements

### AF-S NIKKOR 14-24mm f/2.8G ED\* (1.7x) ED ASP IF D SWM M/A SC N



#### Ultra-wideangle, high-speed zoom lens with SWM

- Fast f/2.8 aperture at 14mm focal length
- PGM aspherical lenses and ED glass elements
- Nano Crystal Coat reduces ghosting and flare
- Compact SWM for accurate, ultra-quiet AF
- Nine-blade rounded diaphragm



Lens construction: 14 elements in 11 groups  
Closest focusing: 0.28m/0.9 ft. (at 18-24mm focal length) Picture angle with Nikon DX format: 35mm (135) format equivalent to 21-36mm Hood: Built-in Dimensions: 98 x 131.5mm Weight: 970g

### AF-S Zoom-Nikkor 17-35mm f/2.8D IF-ED (2.1x) ED ASP IF D SWM M/A SC



#### A high-performance, ultra-wideangle zoom lens with SWM

- Aspherical lenses and ED glass elements
- 0.28m/0.9 ft. closest focusing throughout zoom range
- M/A mode for quick switching between autofocus and manual focus operation
- Nine-blade rounded diaphragm



Lens construction: 13 elements in 10 groups  
Closest focusing: 0.28m/0.9 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 25.5-52.5mm Filter attachment size: 77mm Hood: HB-23 (provided) Dimensions: 82.5 x 106mm Weight: 745g

### AF Zoom-Nikkor 18-35mm f/3.5-4.5D IF-ED (1.9x) ED ASP IF D SC



#### Portable ultra-wideangle zoom lens

- Aspherical lenses and ED glass elements
- Focuses down to 0.33m/1.1 ft.
- IF (Internal Focusing) technology
- Seven-blade rounded diaphragm



Lens construction: 11 elements in 8 groups  
Closest focusing: 0.33m/1.1 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 27-52.5mm Filter attachment size: 77mm Hood: HB-23 (provided) Dimensions: 82.5 x 82.5mm Weight: 370g

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body.  
G-type NIKKOR is compatible with all exposure modes of the Nikon F6, F5, F100, F80, F75, F65, F60, F55, F50, F-401 series, PRONEA 600i, PRONEA S, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40, and the [P] and [S] modes of the F4, F90 series, F70, F-801 series and F-601M. Other cameras are not compatible.



AF Zoom-Nikkor 24-85mm f/2.8-4D IF © Sonoe

- Nano Crystal Coat
- ED glass elements
- Aspherical lens elements

**AF-S NIKKOR 24-70mm f/2.8G ED\* (2.9x)** ED ASP IF D SWM M/A SC N



**Standard zoom lens with constant f/2.8 aperture**

- PGM aspherical lenses and ED glass elements
- Nano Crystal Coat reduces ghosting and flare
- Compact SWM for accurate, ultra-quiet AF
- M/A mode for quick switching between autofocus and manual operation
- Nine-blade rounded diaphragm



Lens construction: 15 elements in 11 groups  
Closest focusing: 0.38m/1.2 ft.

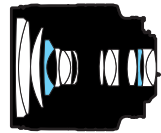
(at 35-50mm focal length) Picture angle with Nikon DX format: 35mm (135) format equivalent to 36-105mm Filter attachment size: 77mm Hood: HB-40 Dimensions: 83 x 133mm Weight: 900g

**AF Zoom-Nikkor 24-85mm f/2.8-4D IF (3.5x)** ASP IF D SC



**High-performance standard zoom lens for landscapes to portraits**

- Fast f/2.8 maximum aperture at 24mm focal length
- Provides maximum 1:2 reproduction ratio from 35-85mm
- Hybrid and moulded-glass aspherical lens elements
- Nine-blade rounded diaphragm



Lens construction: 15 elements in 11 groups  
Closest focusing: 0.5m/1.6 ft. (0.21m/0.7 ft. at macro setting)  
Picture angle with

Nikon DX format: 35mm (135) format equivalent to 36-127.5mm Filter attachment size: 72mm Hood: HB-25 (provided) Dimensions: 78.5 x 82.5mm Weight: 545g

**AF-S VR Zoom-Nikkor 24-120mm f/3.5-5.6G IF-ED\* (5.0x)** ED ASP IF D SWM M/A SC VR



**High-power wideangle zoom lens featuring SWM and VR system**

- SWM for accurate, ultra-quiet AF
- VR operation offers the equivalent of using a shutter speed 3 stops faster (at 120mm)\*\*
- High-power 5x zoom lens
- Two aspherical lenses and two ED glass elements

\*\* As determined by Nikon performance tests.  
Note: VR operation works with the Nikon F6, F5, F80, F75, F65, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40



Lens construction: 15 elements in 13 groups  
Closest focusing: 0.5m/1.6 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 36-180mm Filter attachment size: 72mm Hood: HB-25 (provided) Dimensions: 77 x 94mm Weight: 575g

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body.  
G-type NIKKOR is compatible with all exposure modes of the Nikon F6, F5, F100, F80, F75, F65, F60, F55, F50, F-401 series, PRONEA 600i, PRONEA S, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40, and the [P] and [S] modes of the F4, F90 series, F70, F-801 series and F-601M. Other cameras are not compatible.

AF-S VR Zoom-Nikkor 70-200mm f/2.8G IF-ED © David Mendelsohn







AF Zoom-Nikkor 70-300mm f/4-5.6G © Arthur Meyerson



AF-S VR Zoom-Nikkor 200-400mm f/4G IF-ED © Chase Jarvis

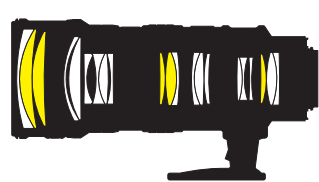
**AF-S VR Zoom-Nikkor 70-200mm f/2.8G IF-ED\* (2.9x)** ED IF D SWM M/A SC VR



**Compact, lightweight G-type fast telephoto zoom lens with Vibration Reduction**

- Built-in SWM for accurate, ultra-quiet AF operation
- VR operation offers the equivalent of using a shutter speed 3 stops (eight times) faster\*\*
- Two VR modes are available; [NORMAL] and [ACTIVE]
- Five ED glass elements

\*\* As determined by Nikon performance tests.



**Lens construction:** 21 elements in 15 groups  
**Closest focusing:** 1.5m/5 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 105-300mm **Filter attachment size:** 77mm **Hood:** HB-29 (provided) **Dimensions:** 87 x 215mm **Weight:** 1,470g (1,395g without tripod mounting foot)

**AF Zoom-Nikkor 70-300mm f/4-5.6G\* (4.3x)** D SC



**High-power G-type telephoto zoom lens**

- Nine-blade rounded diaphragm
- Provides distance information to AF Nikon cameras



**Lens construction:** 13 elements in 9 groups **Closest focusing:** 1.5m/4.9 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 105-450mm **Filter attachment size:** 62mm **Hood:** HB-26 (provided) **Dimensions:** 74 x 116.5mm **Weight:** 425g

**AF-S VR Zoom-Nikkor 70-300mm f/4.5-5.6G IF-ED\* (4.3x)** ED IF D SWM M/A SC VR



**A high-power, high-performance telephoto zoom lens with VR II**

- Built-in SWM for accurate, ultra-quiet operation
- VR II offers the equivalent of a shutter speed 4 stops faster\*\*
- Two ED glass elements ensure superior optical performance
- M/A mode for quick switching between autofocus and manual focus operation
- Nine-blade rounded diaphragm

\*\* As determined by Nikon performance tests.



**Lens construction:** 17 elements in 12 groups **Closest focusing:** 1.5m/4.9 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 105-450mm **Filter attachment size:** 67mm **Hood:** HB-36 **Dimensions:** 80 x 143.5mm **Weight:** 745g

**AF Zoom-Nikkor 80-200mm f/2.8D ED (2.5x)** ED D SC



**Superb telephoto zoom for sports and portraits**

- High-performance, high-speed, telephoto zoom lens
- Holds its fast f/2.8 maximum aperture over the entire range of focal lengths
- Three ED glass elements
- Rotating zoom ring for precise zoom operation

■ : ED glass elements  
 ■ : Aspherical lens elements



**Lens construction:** 16 elements in 11 groups **Closest focusing:** 1.8m/6 ft. (1.5m/4.9 ft. at macro setting) **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 120-300mm **Filter attachment size:** 77mm **Hood:** HB-7 **Dimensions:** 87 x 187mm **Weight:** 1,300g

**AF VR Zoom-Nikkor 80-400mm f/4.5-5.6D ED (5x)** ED D SC VR



**Compact, lightweight telephoto zoom lens with Vibration Reduction**

- VR operation offers the equivalent of using a shutter speed 3 stops (eight times) faster\*
- Vibration Reduction for the viewfinder is cancellable to conserve battery power
- Panning is automatically detected
- Three ED glass elements ensure superior optical performance
- Nine-blade rounded diaphragm

\* As determined by Nikon performance tests.



**Lens construction:** 17 elements in 11 groups **Closest focusing:** 2.3m/7.5 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 120-600mm **Filter attachment size:** 77mm **Hood:** HB-24 (provided) **Dimensions:** 91 x 171mm **Weight:** 1,360g (1,210g without tripod mounting foot)

**AF-S VR Zoom-Nikkor 200-400mm f/4G IF-ED\* (2x)** ED IF D SWM M/A SC VR



**The AF-S VR supertelephoto 2x zoom lens**

- VR operation offers the equivalent of using a shutter speed 3 stops (eight times) faster\*\*
- Two VR modes are available; [NORMAL] and [ACTIVE]
- Focus Preset function
- M/A mode for quick switching between autofocus and manual focus operation
- Four ED glass elements

\*\* As determined by Nikon performance tests.



**Lens construction:** 24 elements in 17 groups **Closest focusing:** 2m/6.5 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 300-600mm **Filter attachment size:** 52mm **Hood:** HK-30 (provided) **Dimensions:** 124 x 365mm **Weight:** 3,275g

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body.  
 G-type NIKKOR is compatible with all exposure modes of the Nikon F6, F5, F100, F80, F75, F65, F60, F55, F50, F-401 series, PRONEA 600i, PRONEA S, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40, and the [P] and [S] modes of the F4, F90 series, F70, F-801 series and F-601M. Other cameras are not compatible.

Note: VR operation works with the Nikon F6, F5, F100, F80, F75, F65, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40.

# Fisheye & **Wide** angle NIKKOR Lenses



AF Fisheye-Nikkor 16mm f/2.8D © Tim Andrew

# Normal NIKKOR Lenses



AF Nikkor 50mm f/1.8D © Steve Zhao

## Wideangle and Normal AF NIKKOR lenses — distinguishing features

**W**ideangle NIKKOR lenses are perfect for shooting in tight indoor areas or when taking group shots. Travel, landscape, and commercial photography are just a few of the applications suited to these lenses. The **14mm f/2.8D ED** offers the widest views.

For one of the most unique perspectives in photography, there's the **16mm fisheye f/2.8D**. Featuring Nikon's unique Close-Range Correction (CRC) system, the lens provides a 180° angle of view with consistent picture quality from all focusing distances.



**Normal lenses** are so called because they provide a 46° picture angle, for an angle of view that approximates that of the human eye. They are useful for many applications, from landscapes to candid shots. Other advantages include wide maximum apertures. The **50mm f/1.4D** is extremely fast, and the **50mm f/1.8D** is the most compact of all AF NIKKOR lenses.

### AF Fisheye-Nikkor 16mm f/2.8D



**Frame-filling fisheye makes dramatic images**

- Full-frame fisheye images with a picture angle of 180° (diagonal)
- Close-Range Correction (CRC) system provides high performance at both near and far focusing distances
- Focuses down to 0.25m/0.85 ft.

- : ED glass elements
- : Aspherical lens elements

### Fisheye NIKKOR Lenses



**Lens construction:** 8 elements in 5 groups  
**Closest focusing:** 0.25m/0.85 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 24mm **Filter (provided):** L37C, A2, B2, O56 **Hood:** Built-in  
**Dimensions:** 63 x 57mm **Weight:** 290g

### AF Nikkor 14mm f/2.8D ED



**High-performance, ultra-wideangle lens for photo journalism**

- Hybrid aspherical lens elements and ED glass element
- Picture angle with Nikon DX format is equivalent to that of 21mm lens in 35mm (135) format
- RF (Rear Focusing) system

### Wideangle NIKKOR Lenses



**Lens construction:** 14 elements in 12 groups  
**Closest focusing:** 0.2m/0.66 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 21mm **Filter attachment size:** Rear-attachment type □27mm  
**Hood:** Built-in **Dimensions:** 87 x 86.5mm  
**Weight:** 670g

### AF Nikkor 20mm f/2.8D



**Versatile ultra-wideangle lens for general photography**

- Compact ultra-wideangle lens construction
- Close-Range Correction (CRC) system
- 94° picture coverage with edge-to-edge sharpness



**Lens construction:** 12 elements in 9 groups  
**Closest focusing:** 0.25m/0.85 ft. **Picture angle with Nikon DX format:** 35mm (135) format equivalent to 30mm  
**Filter attachment size:** 62mm **Hood:** HB-4  
**Dimensions:** 69 x 42.5mm **Weight:** 270g



AF Nikkor 50mm f/1.8D © Fraser Harding



AF Nikkor 50mm f/1.4D © Chase Jarvis

■: ED glass elements  
■: Aspherical lens elements

## Normal NIKKOR Lenses

### AF Nikkor 24mm f/2.8D



#### Superb wideangle for landscapes or candid

- Compact wideangle lens
- Lightweight construction
- Close-Range Correction (CRC) system
- 84° picture coverage with edge-to-edge sharpness



Lens construction: 9 elements in 9 groups  
Closest focusing: 0.3m/1 ft. Picture angle with Nikon DX format: 35mm (1.35) format equivalent to 36mm Filter attachment size: 52mm Hood: HN-1 Dimensions: 64.5 x 46mm Weight: 270g

### AF Nikkor 28mm f/2.8D



#### Standard wideangle for general photography

- Compact, lightweight wideangle lens
- 74° picture coverage for superlative flexibility
- Focuses down to 0.25m/0.85 ft.



Lens construction: 6 elements in 6 groups  
Closest focusing: 0.25m/0.85 ft. Picture angle with Nikon DX format: 35mm (1.35) format equivalent to 42mm Filter attachment size: 52mm Hood: HN-2 Dimensions: 65 x 44.5mm Weight: 205g

### AF Nikkor 35mm f/2D



#### Versatile wideangle ideal for a broad range of uses

- Compact, lightweight wideangle lens
- 62° picture coverage
- Great for travel and candid photography
- Focuses down to 0.25m/0.85 ft.



Lens construction: 6 elements in 5 groups  
Closest focusing: 0.25m/0.85 ft. Picture angle with Nikon DX format: 35mm (1.35) format equivalent to 52.5mm Filter attachment size: 52mm Hood: HN-3 Dimensions: 64.5 x 43.5mm Weight: 205g

### AF Nikkor 50mm f/1.4D



#### High-performance normal lens

- High-speed normal lens
- Great for travel and for shooting full-length portraits in available light
- Distortion-free images with superb resolution and colour rendition
- Provides high-contrast images even at maximum aperture



Lens construction: 7 elements in 6 groups  
Closest focusing: 0.45m/1.5 ft. Picture angle with Nikon DX format: 35mm (1.35) format equivalent to 75mm Filter attachment size: 52mm Hood: HR-2 Dimensions: 64.5 x 42.5mm Weight: 230g

### AF Nikkor 50mm f/1.8D



#### Portable normal lens

- Compact, affordable normal lens
- Lightweight (155g)
- Great depth-of-field control — stops down to f/22
- Ideal for close-up photography with an Auto Extension Ring



Lens construction: 6 elements in 5 groups  
Closest focusing: 0.45m/1.5 ft. Picture angle with Nikon DX format: 35mm (1.35) format equivalent to 75mm Filter attachment size: 52mm Hood: HR-2 Dimensions: 63.5 x 39mm Weight: 155g

# Telephoto NIKKOR Lenses

(DC-NIKKOR lenses, AF-S NIKKOR lenses, AF-S Teleconverters)



AF-S Nikkor 300mm f/4D IF-ED © Frans Lanting

## Telephoto AF NIKKOR lenses — distinguishing features

With an array of focal lengths from 85mm to 600mm, extraordinary optics and high-performance autofocus, telephoto AF NIKKOR lenses have much to offer any serious photographer.

**NIKKOR** telephoto lenses bearing the **AF-S** name offer incredibly smooth, quiet autofocus operation, thanks to Nikon's exclusive **SWM**. Indispensable for shooting fast-moving action, these telephoto lenses deliver superior autofocus for the Nikon F6, F5, F100, F90X, F90, F80, F75, F70, F65, PRONEA S, PRONEA 600i, D3, D2-series, D1-series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40 cameras, and provide manual focusing for other Nikon SLRs.

Other AF-S NIKKOR features include an innovative **M/A control** that lets you switch quickly from automatic to manual focusing modes, ergonomically placed **focus lock buttons**, and a **focus range limiter** that diminishes autofocus time.

For exceptional portrait photography, try the **AF DC-NIKKOR** lenses. They offer Nikon's exclusive **Defocus-image Control** which allows you to adjust the amount of foreground or background blur with a rotating ring. Nine-blade diaphragm built into the lenses creates a rounded out-of-focus blur that is ideal for portraits.

Nikon also offers **AF-S Teleconverters** designed exclusively for AF-S NIKKOR lenses. You can increase the focal length of NIKKOR telephoto lens by 1.4x with the **TC-14E II**, 1.7x with the **TC-17E II** or 2.0x with the **TC-20E II**.



AF Nikkor 85mm f/1.8D © Peter Frank

■: ED glass elements  
■: Aspherical lens elements

### AF Nikkor 85mm f/1.4D IF IF D SC



**The fastest NIKKOR telephoto — great for indoor portraits**

- High-performance medium telephoto lens
- Fast maximum aperture of f/1.4
- IF (Internal Focusing) technology for fast AF operation
- Rounded diaphragm opening makes out-of-focus elements appear more natural



Lens construction: 9 elements in 8 groups Closest focusing: 0.85m/3 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 127.5mm Filter attachment size: 77mm Hood: HN-31 (Provided) Dimensions: 80 x 72.5mm Weight: 550g

### AF Nikkor 85mm f/1.8D RF D SC



**Portable medium telephoto — ideal for portraits**

- High-speed telephoto lens
- RF (Rear Focusing) technology for fast AF operation
- Very compact and lightweight
- Ideal for indoor or outdoor portrait shooting



Lens construction: 6 elements in 6 groups Closest focusing: 0.85m/3 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 127.5mm Filter attachment size: 62mm Hood: HN-23 (Provided) Dimensions: 71.5 x 58.5mm Weight: 380g

### AF DC-Nikkor 105mm f/2D RF D SC



**Standard portrait lens with Defocus-image Control**

- Fast, medium telephoto lens with Defocus-image Control
- Large maximum aperture allows shooting in dim light
- Rounded diaphragm opening makes out-of-focus elements appear more natural
- RF (Rear Focusing) technology for fast AF operation



Lens construction: 6 elements in 6 groups Closest focusing: 0.9m/3 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 157.5mm Filter attachment size: 72mm Hood: Built-in Dimensions: 79 x 111mm Weight: 640g

### AF DC-Nikkor 135mm f/2D RF D SC



**High-performance telephoto with Defocus-image Control**

- Fast telephoto lens featuring Defocus-image Control
- Large maximum aperture allows shooting in dim light
- Rounded diaphragm opening makes out-of-focus elements appear more natural
- RF (Rear Focusing) technology for fast AF operation



Lens construction: 7 elements in 6 groups Closest focusing: 1.1m/4 ft. Picture angle with Nikon DX format: 35mm (135) format equivalent to 202.5mm Filter attachment size: 72mm Hood: Built-in Dimensions: 79 x 120mm Weight: 815g

**AF Nikkor 180mm f/2.8D IF-ED** 



**High-performance medium telephoto for sports arenas or concert halls**

- High-performance telephoto lens
- Perfect for news, sports, action and astronomical photography
- ED glass element
- IF (Internal Focusing) technology



Lens construction: 8 elements in 6 groups  
Closest focusing: 1.5m/5 ft.

Picture angle with Nikon DX format: 35mm (135) format equivalent to 270mm  
Filter attachment size: 72mm Hood: Built-in  
Dimensions: 78.5 x 144mm Weight: 760g

**AF-S VR Nikkor 200mm f/2G IF-ED\*** 



**High-performance telephoto featuring SWM and VR system**

- VR operation offers the equivalent of using a shutter speed 3 stops faster\*\*
- Four ED glass elements including one Super ED glass
- Two VR modes are available; [NORMAL] and [ACTIVE]
- Focus Preset function
- Focuses down to 1.9m/6.2 ft.

\*\* As determined by Nikon performance tests.



Lens construction: 13 elements in 9 groups  
Closest focusing: 1.9m/6.2 ft.

Picture angle with Nikon DX format: 35mm (135) format equivalent to 300mm  
Filter attachment size: 52mm Hood: HK-31 (Provided)  
Dimensions: 124 x 203mm Weight: 2,900g

**AF-S VR Nikkor 300mm f/2.8G IF-ED\*** 



**Telephoto with SWM and VR for serious sport photographers**

- VR operation offers the equivalent of using a shutter speed 3 stops faster\*\*
- ED glass elements
- Nano Crystal Coat reduces ghost and flare for clear images
- M/A mode allows rapid switching between autofocus and manual operation
- Focus Preset function

\*\* As determined by Nikon performance tests.



Lens construction: 11 elements in 8 groups  
Closest focusing: 2.3m/7.5 ft.

(2.2m/7.2 ft. for MF) Picture angle with Nikon DX format: 35mm (135) format equivalent to 450mm  
Filter attachment size: 52mm Hood: HK-30 (Provided)  
Dimensions: Approx. 124 x 267.5mm Weight: Approx. 2,870g

Note: Nano Crystal Coat is applied to the rear (camera side) of lens surfaces.

**AF-S Nikkor 300mm f/4D IF-ED** 



**A light, compact AF-S telephoto lens**

- High optical performance even with a teleconverter attached
- ED glass elements
- Focuses down to 1.45m/4.8 ft.
- M/A mode allows rapid switching between autofocus and manual operation
- Nine-blade rounded diaphragm



Lens construction: 10 elements in 6 groups  
Closest focusing: 1.45m/4.8 ft.

Picture angle with Nikon DX format: 35mm (135) format equivalent to 450mm  
Filter attachment size: 77mm Hood: Built-in  
Dimensions: 90 x 222.5mm Weight: 1,440g (1,300g without tripod mounting foot)

**AF-S NIKKOR 400mm f/2.8G ED VR\*** 



**High-performance supertelephoto with SWM and VR II**

- VR II offers the equivalent of a shutter speed four stops faster\*\*
- Tripod mode reduces vibration that may occur at shutter release
- Nano Crystal Coat and meniscus protective glass reduce ghosting and flare
- Magnesium alloy ensures lightweight body
- Nine-blade rounded diaphragm





\*\* As determined by Nikon performance tests.



Lens construction: 14 elements in 11 groups  
Closest focusing: 2.9m/9.5 ft. (2.8m/9.2 ft. in MF)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 600mm  
Filter attachment size: 52mm Hood: HK-33 (provided)  
Dimensions: 159.5 x 368mm Weight: 4,620g



© Nikon  
AF-S NIKKOR 600mm f/4G ED VR

-  : Nano Crystal Coat
-  : Super ED glass elements
-  : ED glass elements
-  : Aspherical lens elements

**AF-S NIKKOR 500mm f/4G ED VR\*** 



**Powerful supertelephoto with SWM and VR II**

- VR II offers the equivalent of a shutter speed four stops faster\*\*
- Tripod mode reduces vibration that may occur at shutter release
- Nano Crystal Coat and meniscus protective glass reduce ghosting and flare
- Magnesium alloy ensures lightweight body
- Nine-blade rounded diaphragm

\*\* As determined by Nikon performance tests.



Lens construction: 14 elements in 11 groups  
Closest focusing: 4.0m/13.1 ft. (3.85m/12.6 ft. in MF)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 750mm  
Filter attachment size: 52mm Hood: HK-34 (provided)  
Dimensions: 139.5 x 391mm Weight: 3,880g

**AF-S NIKKOR 600mm f/4G ED VR\*** 



**Powerful supertelephoto with SWM and VR II**

- VR II offers the equivalent of a shutter speed four stops faster\*\*
- Tripod mode reduces vibration that may occur at shutter release
- Nano Crystal Coat and meniscus protective glass reduce ghosting and flare
- Magnesium alloy ensures lightweight body
- Nine-blade rounded diaphragm

\*\* As determined by Nikon performance tests.



Lens construction: 15 elements in 12 groups  
Closest focusing: 5.0m/16.4 ft. (4.8m/15.7 ft. in MF)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 900mm  
Filter attachment size: 52mm Hood: HK-34 (provided)  
Dimensions: 166 x 445mm Weight: 5,060g

**Teleconverters** **AF-S**

**AF-S Teleconverter TC-14E II**



- Increases the original focal length by 40%
- Reduces lens aperture by one f-stop
- Autofocus possible with AF-S and AF-I NIKKOR lenses having maximum aperture of f/4 or larger (except AF-S VR Micro 105mm f/2.8G IF-ED)

Lens construction: 5 elements in 5 groups  
Dimensions: 66 x 24.5mm Weight: 200g

**AF-S Teleconverter TC-17E II**



- Increase the original focal length by 70%
- Reduces lens aperture by 1.5 f-stops
- Autofocus possible with AF-S and AF-I NIKKOR lenses having maximum aperture of f/2.8 or larger (except AF-S VR Micro 105mm f/2.8G IF-ED)

Lens construction: 7 elements in 4 groups  
Dimensions: 66 x 31.5mm Weight: 250g

**AF-S Teleconverter TC-20E II**



- Increases the original focal length by 100%
- Reduces lens aperture by two f-stops
- Autofocus possible with AF-S and AF-I NIKKOR lenses having maximum aperture of f/2.8 or larger (except AF-S VR Micro 105mm f/2.8G IF-ED)

Lens construction: 7 elements in 6 groups  
Dimensions: 66 x 55mm Weight: 355g

Note: AF-S Teleconverters are compatible with AF-S and AF-I NIKKOR lenses except AF-S 14-24mm f/2.8G ED, 17-35 mm f/2.8D IF-ED, 24-70mm f/2.8G ED, VR 24-120mm f/3.5-5.6G IF-ED, 28-70mm f/2.8D IF-ED, VR 70-300mm f/4.5-5.6G IF-ED and DX NIKKOR lenses.

Note: VR operation works with the Nikon F6, F5, F100, F80, F75, F65, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40.

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body.  
G-type NIKKOR is compatible with all exposure modes of the Nikon F6, F5, F100, F80, F75, F65, F60, F55, F50, F-401 series, PRONEA 600i, PRONEA S, D3, D2 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40 and the [P] and [S] modes of the F4, F90 series, F70, F-801 series and F-601M. Other cameras are not compatible.

# Micro-NIKKOR Lenses



AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED © Chase Jarvis



AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED © Ghislain Simard

Micro-NIKKOR lenses — distinguishing features

For close-up photography without compromise, Micro-NIKKOR lenses are the obvious choice for your Nikon SLR.

Each Micro-NIKKOR lens enables photographers to shoot **1:1 life-size close-ups**, without the need for additional accessories. Each lens also features f-stops down to **f/32**, for **maximum depths of field**, so indispensable for close-ups and macro shooting.




Moreover, to deliver superior optical performance and colour reproduction at all subject distances from macro to infinity, these lenses incorporate **a host of Nikon original optical features**, including Nikon Super Integrated Coating and Close-Range Correction system. Combined, these factors contribute to the extremely accurate image reproduction capability of these lenses.

## AF-S Micro NIKKOR 60mm f/2.8G ED\*



**Compact, high-performance Micro lens with SWM**

- Versatile lens for close-up and general photography
- Close-up to approx. 0.185m/0.6 ft. (1:1 reproduction ratio)
- ED glass elements, aspherical lenses and one with Nano Crystal Coat
- Nine-blade rounded diaphragm

-  : Nano Crystal Coat
-  : ED glass elements
-  : Aspherical lens elements



Lens construction: 12 elements in 9 groups  
Closest focusing: 0.185m (0.6 ft.)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 90mm  
Working distance\*: 49.5mm  
Filter attachment size: 62mm  
Hood: HB-42  
Dimensions: Approx. 73 x 89mm  
Weight: Approx. 425g

## AF Micro-Nikkor 60mm f/2.8D



**Nikon's most compact Micro lens for close-up and general photography**

- Versatile lens for macro photography
- Close-up to approx. 0.219m/8-3/4 in. (1:1 reproduction ratio)
- Close-Range Correction (CRC) system provides high performance at both near and far focusing distances



Lens construction: 8 elements in 7 groups  
Closest focusing: 0.219m (8-3/4 in.)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 90mm  
Working distance\*: 90.4mm  
Filter attachment size: 62mm  
Hood: HN-22  
Dimensions: 70 x 74.5mm  
Weight: 440g

## AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED\*



**The world's first macro lens equipped with SWM and VR systems**

- Versatile medium telephoto lens for portrait and detail work
- Close-up to approx. 0.31m/1 ft. (1:1 reproduction ratio)
- Nano Crystal Coat reduces ghost and flare
- Built-in SWM for accurate, ultra quiet AF operation
- VR II offers the equivalent of a shutter speed four stops faster\*



Lens construction: 14 elements in 12 groups  
Closest focusing: 0.314m (1 ft.)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 157.5mm  
Working distance\*: 154mm  
Filter attachment size: 62mm  
Hood: HB-38 (provided)  
Dimensions: 83 x 116mm  
Weight: 790g

\* As determined by Nikon performance tests

## AF Micro-Nikkor 200mm f/4D IF-ED



**Telephoto Micro lens for close-ups and nature photography**

- Extremely versatile telephoto lens with long working distance
- Close-up to approx. 0.5m/1-5/8 ft. (1:1 reproduction ratio)
- 26cm working distance for easy close-ups
- Nine-blade rounded diaphragm



Lens construction: 13 elements in 8 groups  
Closest focusing: 0.5m (1-5/8 ft.)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 300mm  
Working distance\*: 260mm  
Filter attachment size: 62mm  
Hood: HN-30  
Dimensions: 76 x 193mm  
Weight: 1,190g

## PC Micro-Nikkor 85mm f/2.8D



**85mm medium telephoto lens with tilt/shift mechanism and macro capability**

- Wide tilting and shifting range (tilt:  $\pm 8.3^\circ$ , shift:  $\pm 12.4$ mm)
- 1/2 life-size macro shooting capability (at 0.39m/1.3 ft.)
- $\pm 90^\circ$  lens revolving capability for versatile tilt/shift effects.



Lens construction: 6 elements in 5 groups  
Closest focusing: 0.39m (1.3 ft.)  
Picture angle with Nikon DX format: 35mm (135) format equivalent to 127.5mm  
Working distance\*: 210mm  
Filter attachment size: 77mm  
Hood: HB-22  
Dimensions: 83.5 x 109.5mm  
Weight: 775g

\*Working distance is the distance between the front of the lens and the subject. It is desirable to have a longer free working distance for close-up work due to lighting and subject considerations.

\* The G-type NIKKOR has no aperture ring; aperture should be selected from camera body. G-type Nikkor is compatible with all exposure modes of the Nikon F6, F5, F100, F80, F75, F65, F60, F55, F50, F-401 series, PRONEA 6001, PRONEA S, D3, D2 series, D1 series, D300, D200, D100, D80, D70S/D70, D60, D50 and D40X/D40, and the [P] and [S] modes of the F4, F90 series, F70, F-801 series and F-601M. Other cameras are not compatible.

# PC-E NIKKOR Lenses



PC-E Micro NIKKOR 45mm f/2.8D ED © Nikon

Perspective distortion is corrected by shifting the lens up



Tilting the lens achieves focus on a specific part of the subject



Without tilting

PC-E Micro NIKKOR 85mm f/2.8D © N. Yuasa

## PC-E NIKKOR lenses — distinguishing features

PC-E NIKKOR lenses, with their **Perspective Control capability**, are equipped with a **tilt/shift mechanism** that enables photographers to emphasise or correct far and near perspective, control depth of field, resolve distortions caused by the camera angle, and achieve the desired focus throughout the entire subject plane, even when it is not parallel to the camera's focal plane.

Furthermore, these lenses incorporate **numerous state-of-the-art Nikon optical features and technologies** that ensure superior picture quality even at the maximum tilt and/or shift settings.

The **electromagnetic diaphragm** employed in these lenses enables **auto aperture control** when used with compatible camera models.

In addition to applications with subject matter that requires perspective control, such as architecture, landscapes and commercial products, these lenses are also ideal for various other situations, such as close-up photography.

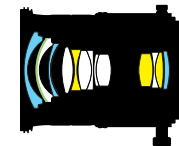
### PC-E NIKKOR 24mm f/3.5D ED



#### High-performance wideangle lens with Perspective Control

- Wide shifting and tilting range (shift:  $\pm 11.5\text{mm}$ ; tilt:  $\pm 8.5^\circ$ )
- $\pm 90^\circ$  lens revolving capability for versatile tilt/shift effects
- Maximum reproduction ratio of 1/2.7 (at 0.21m/0.75 ft.)
- Three ED glass elements, and three aspherical lenses
- Nano Crystal Coat reduces ghost and flare for clear images
- Nine-blade rounded diaphragm
- Auto aperture control with electromagnetic diaphragm (with D3 and D300)

- Nano Crystal Coat
- ED glass elements
- Aspherical lens elements



Lens construction: 13 elements in 10 groups  
Closest focusing: 0.21m/0.75 ft.  
Picture angle with Nikon DX Format: 35mm (135) format equivalent to 36mm  
Filter attachment size: 77mm  
Hood: HB-41  
Dimensions: Approx. 82.5 x 108mm  
Weight: Approx. 730g

### PC-E Micro NIKKOR 45mm f/2.8D ED



#### Normal lens with Perspective Control and macro capability

- Wide shifting and tilting range (shift:  $\pm 11.5\text{mm}$ ; tilt:  $\pm 8.5^\circ$ )
- $\pm 90^\circ$  lens revolving capability for versatile tilt/shift effects
- Maximum reproduction ratio of 1/2 (at 0.253m/0.83 ft.)
- ED glass element
- Nano Crystal Coat reduces ghost and flare for clear images
- Nine-blade rounded diaphragm
- Auto aperture control with electromagnetic diaphragm (with D3 and D300)



Entire subject plane is in focus with tilting



Without tilting

Lens construction: 9 elements in 8 groups  
Closest focusing: 0.253m/0.83 ft.  
Picture angle with Nikon DX Format: 35mm (135) format equivalent to 67.5mm  
Filter attachment size: 77mm  
Hood: HB-43  
Dimensions: Approx. 82.5 x 112mm  
Weight: Approx. 740g

### PC-E Micro NIKKOR 85mm f/2.8D



#### Medium telephoto lens with Perspective Control and macro capability

- Wide shifting and tilting range (shift:  $\pm 11.5\text{mm}$ ; tilt:  $\pm 8.5^\circ$ )
- $\pm 90^\circ$  lens revolving capability for versatile tilt/shift effects
- Maximum reproduction ratio of 1/2 (at 0.39m/1.3 ft.)
- Nano Crystal Coat reduces ghost and flare for clear images
- Nine-blade rounded diaphragm
- Auto aperture control with electromagnetic diaphragm (with D3 and D300)

Lens construction: 6 elements in 5 groups  
Closest focusing: 0.39m/1.3 ft.  
Picture angle with Nikon DX Format: 35mm (135) format equivalent to 67.5mm  
Filter attachment size: 77mm  
Hood: HB-22  
Dimensions: Approx. 83.5 x 107mm  
Weight: Approx. 635g

Notes: The Nikon D3 can be used without any limitation. With other cameras, there are limitations in tilt/shift operation. The Nikon F90X series, F90 series, F70, F60D, F55, F50D, F-401 series, F-801 series, F-601, F-601M, F3AF, F-501, PRONEA S or MF cameras cannot be used.





# Manual-focus Lenses

A versatile and unique selection of lenses



© Fraser Harding

## Nikkor 20mm f/2.8



### Versatile ultra-wideangle lens for general photography

- Compact, ultra-wideangle lens construction
- 94° picture angle with edge-to-edge sharpness
- Close-Range Correction (CRC) system

Lens construction: 12 elements in 9 groups  
Closest focusing: 0.25m/0.85 ft.  
Picture angle: 94°  
Filter attachment size: 62mm  
Hood: HK-14  
Dimensions: 65 x 42.5mm  
Weight: 260g

## Nikkor 24mm f/2.8



### Superb wideangle for landscapes or candid

- Compact wideangle lens
- 84° picture angle with edge-to-edge sharpness
- Close-Range Correction (CRC) system

Lens construction: 9 elements in 9 groups  
Closest focusing: 0.3m/1 ft.  
Picture angle: 84°  
Filter attachment size: 52mm  
Hood: HN-1  
Dimensions: 63 x 46mm  
Weight: 275g

## Nikkor 28mm f/2.8



### Standard wideangle for general photography

- Compact, lightweight wideangle lens
- 74° picture angle for superlative flexibility
- Close-Range Correction (CRC) system

Lens construction: 8 elements in 8 groups  
Closest focusing: 0.2m/0.7 ft.  
Picture angle: 74°  
Filter attachment size: 52mm  
Hood: HN-2  
Dimensions: 63 x 44.5mm  
Weight: 250g

## Nikkor 35mm f/1.4



### Superior image quality with a wide aperture of f/1.4

- High-speed wideangle lens
- High-contrast, sharp images even at maximum aperture
- Close-Range Correction (CRC) system

Lens construction: 9 elements in 7 groups  
Closest focusing: 0.3m/1 ft.  
Picture angle: 62°  
Filter attachment size: 52mm  
Hood: HN-3  
Dimensions: 67.5 x 62mm  
Weight: 400g

## Nikkor 50mm f/1.2



### Ultra-fast f1.2 aperture normal lens

- High-speed normal lens
- High-contrast, sharp images even at maximum aperture
- Ideal for candid, scenic, and available-light shooting

Lens construction: 7 elements in 6 groups  
Closest focusing: 0.5m/1.7 ft.  
Picture angle: 46°  
Filter attachment size: 52mm  
Hood: HS-12, HR-2  
Dimensions: 68.5 x 47.5mm  
Weight: 360g

## Nikkor 50mm f/1.4



### High-performance normal lens

- High-speed normal lens
- Distortion-free images with superb resolution
- Great for travel and for shooting full-length portraits in available light

Lens construction: 7 elements in 6 groups  
Closest focusing: 0.45m/1.5 ft.  
Picture angle: 46°  
Filter attachment size: 52mm  
Hood: HS-9, HR-1  
Dimensions: 63 x 40mm  
Weight: 250g

## Micro-Nikkor 55mm f/2.8



### Superb normal Macro lens with 1/2 maximum reproduction ratio

- Versatile lens for macro photography
- Close-up to approx. 0.25m/0.9 ft. (1:2 reproduction ratio)
- Close-Range Correction (CRC) system

Lens construction: 6 elements in 5 groups  
Closest focusing: 0.25m/0.9 ft.  
Picture angle: 43°  
Filter attachment size: 52mm  
Hood: HN-3  
Dimensions: 63.5 x 62mm  
Weight: 290g

## Micro-Nikkor 105mm f/2.8



### Medium telephoto with macro close-up capability

- Versatile medium telephoto lens for close-up and candid photography
- Close-up to approx. 0.41m/1.34 ft. (1:2 reproduction ratio)
- Close-Range Correction (CRC) system

Lens construction: 10 elements in 9 groups  
Closest focusing: 0.41m/1.34 ft.  
Picture angle: 23°20'  
Filter attachment size: 52mm  
Hood: HS-14 (provided)  
Dimensions: 66.5 x 83.5mm  
Weight: 515g

## Specifications

Lens	Lens Construction (groups/elements)	Picture Angle	Minimum f/Stop	Closest Marked Focus Distance [Macro Setting] [m (ft.)]	Maximum Reproduction Ratio [Macro Setting]	Filter Attachment Size (mm)	Lens Case	Lens Hood	Dia. x Length (extension from lens mount) (mm)	Weight (g)	TC-201	TC-301	TC-14A	TC-14B	Max. AF-3 number of HN-36 hoods usable	Max. AF-4 number of HN-37 hoods usable		
<b>Wideangle</b>																		
Nikkor 20mm f/2.8 <sup>*1</sup>	9/12	94°	22	0.25 (0.85)	1/8.3	62	CL-0915	HK-14	65 x 42.5	260	①	—	①	—	✓ <sup>a</sup>	0	✓	0
Nikkor 24mm f/2.8 <sup>*1</sup>	9/9	84°	22	0.3 (1)	1/8.8	52	CL-0915	HN-1	63 x 46	275	①	—	①	—	✓	0	✓	1
Nikkor 28mm f/2.8 <sup>*1</sup>	8/8	74°	22	0.2 (0.7)	1/3.9	52	CL-0815	HN-2	63 x 44.5	250	①	—	①	—	✓	0	✓	1
Nikkor 35mm f/1.4 <sup>*1</sup>	7/9	62°	16	0.3 (1)	1/5.6	52	CL-S2	HN-3	67.5 x 62	400	②	—	②	—	✓	0	✓	1
<b>Normal</b>																		
Nikkor 50mm f/1.2	6/7	46°	16	0.5 (1.7)	1/7.9	52	CL-0915	HS-12, HR-2	68.5 x 47.5	360	①	—	①	—	✓	1	✓	2
Nikkor 50mm f/1.4	6/7	46°	16	0.45 (1.5)	1/6.8	52	CL-0815	HS-9, HR-1	63 x 40	250	②	—	②	—	✓	1	✓	3
<b>Special Purpose</b>																		
PC Micro-Nikkor 85mm f/2.8D <sup>*1, *2</sup>	5/6	28°30'	45	0.39 (1.3)	1/2	77	CL-75	HB-22	83.5 x 109.5	775	—	—	—	①	✓ <sup>a</sup>	0	✓	0
Micro-Nikkor 55mm f/2.8 <sup>*1</sup>	5/6	43°	32	0.25 (0.9)	1/2	52	CL-0915	HN-3	63.5 x 62	290	①	—	①	—	✓	1	✓	3
Micro-Nikkor 105mm f/2.8 <sup>*1</sup>	9/10	23°20'	32	0.41 (1.34)	1/2	52	CL-1018, CL-38 <sup>*3</sup>	HS-14	66.5 x 83.5	515	①	—	①	—	✓	3	✓	5

\*1 Features Close-Range Correction (CRC) system.

\*2 The camera's exposure metering and flash control system do not work properly when shifting and/or tilting the lens, or when using an aperture other than the maximum aperture. Shifting and/or tilting the lens to a large degree can cause some vignetting. This lens cannot be used with the Nikon PRONEA S camera.

\*3 With a PN-11 ring.

① Usable.

② When used at smaller aperture than f/11 with high shutter speeds, there is occasional uneven exposure.

— Not usable.

✓ Usable.

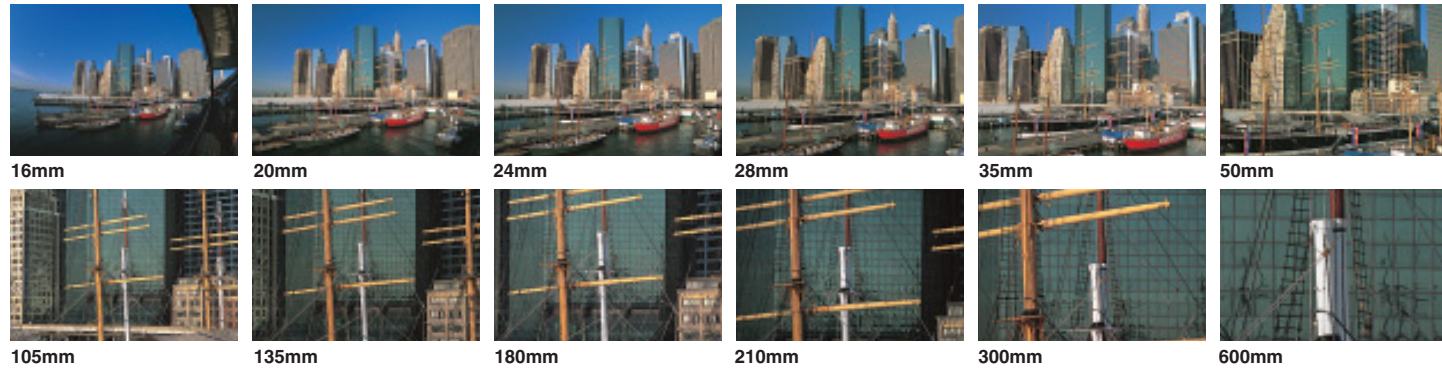
\*a Slight vignetting occurs.

\*b Vignetting will occur only in certain situations.

# Choosing the right lens — some points to consider

Selecting which lens to purchase is one of the most important decisions you can make as a photographer, for the lens often determines both what and how you can shoot.

Below, we've outlined a range of technical factors to consider when searching for the lens that's right for you.

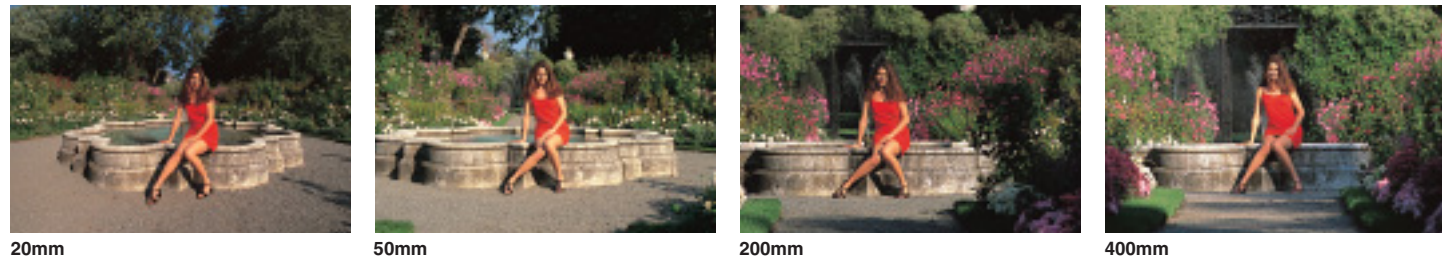


**Picture angle** Picture angle refers to the view or image area the lens provides, and different picture angles can dramatically affect the way you view the world through your lens.

Basically, it is the focal length of the lens that determines the picture angle — the shorter the focal length, the wider

the picture angle and the smaller the image size. A longer focal length means a narrower picture angle and larger image size. For example, a 50mm normal lens is so called because it gives a 46° picture angle in 35mm (135) format for images that are about the same size with that of the human eye.

Accordingly, wideangle lenses offer broader views and are the favourite lenses of landscape photographers and those who shoot in tight interior spaces. Telephoto lenses pull in distant subjects and scenes, for a narrower picture angle that can provide dramatic close-ups for many types of photography.



**Perspective** Perspective is a phenomenon that is easier to understand by example than explanation and is wholly determined by the camera-to-subject distance (see photos, above).

In short, perspective is the relative

size and depth of subjects within a picture; that is, how far the foreground and background appear to be separated from each other. If foreground objects appear much larger than those in the background — which occurs when

using wideangle lenses — this is called exaggerated perspective.

Understanding the different perspectives offered by different lenses will help in choosing which lens to use to create certain photographic effects.

**Maximum aperture (f-number)** The maximum aperture of the lens can determine how and in what lighting situations you can shoot. Aperture value is indicated by f-number which can be expressed in various ways: f/8, F8 and 1:8, for example, all refer to the same effective aperture. Lenses with large maximum apertures

(smaller f-numbers) are 'fast' lenses that allow photographers to use faster shutter speeds in dim light. This minimises the need for a tripod or flash, allows greater depth-of-field control (see below) and offers a brighter image through the lens finder for easier focusing.

Lenses with smaller maximum aper-

tures (larger f-numbers) allow the use of lower shutter speeds for available light but are also lighter and smaller than faster lenses. Nikon offers some NIKKOR lenses with equal focal lengths, but different maximum apertures to give you a variety from which to choose.

**Depth of field** This term refers to the areas of the photograph — both in front of and behind the main subject — that are acceptably sharp. You can adjust depth of field by adjusting the lens aperture. The smaller the aperture (larger f-number) gives you a greater depth of field. This means that shooting at larger apertures like f/1.8 will make the background appear blurred, while using small apertures like f/16 or f/22

will result in a picture where much of the scene is in sharp focus.

Focal length is also important, for the depth of field decreases as the lens' focal length increases. Thus, wideangle lenses offer inherently more depth of field along the entire focal length while telephoto lenses have less.



Great depth of field (f/16)



Shallow depth of field (f/2.8)

## Accessories for NIKKOR Lenses

### Close-up Accessories

#### Auto Extension Rings PK and PN

Compact, lightweight and easy to attach, these rings — PK-11A, PK-12, PK-13 and PN-11 — offer a wide range of reproduction ratios. They fit between the camera body and lens either isolated or in combination.



### Tripod Mounting Spacer

#### AH-5 for the PC Micro-Nikkor 85mm f/2.8D

When using a tripod with the PC Micro-Nikkor 85mm f/2.8D, the AH-5 provides space between the camera body and tripod for smoother tilt/shift operation.



### Photographic Attachment for Fieldscope

This attachment lets you transform Nikon Fieldscopes III/III A/EDIII/EDIII A into an 800mm f/12.8 (1,000mm f/13.3 with the ED78/ED78A/ED82/ED82A) supertelephoto lens.



### Fieldscope Digital SLR Camera Attachment

#### FSA-L1

Transform your Fieldscope into a 1,200mm\* or 1,500mm\* super-telephoto lens for Nikon SLR cameras and take spectacular close-up images.

\* 35mm-format equivalent



### Lens Hoods

Lens hoods minimise stray light, helping reduce flare and eliminate "ghost" images; they also protect the lens.



CL-M1

CL-M2

CL-L1



CT-F1



CL-S2

CL-S3

CL-S4

CL-L2

### Lens Caps

Made of hard plastic, metal or leather, these caps protect the front and rear portions of the lens from dust, smudges and scratches.

Front lens caps are available in the following attachment sizes: 52mm, 58mm, 62mm, 72mm, 77mm, 85mm, 95mm, 108mm. Rear Lens Cap LF-1 is compatible with all lenses.

### Lens Strap

The Lens Strap LN-1 is easily adjustable for carrying various telephoto lenses, even large, heavy ones, comfortably on a shoulder.

### Lens Cases

Nikon lens cases keep your fine optical equipment safe from dust, dampness and shocks.

**Cylindrical Case (CL):** The handsome black leatherette finish is complemented by soft, plush lining.

**Trunk Case (CT):** A durable trunk case is supplied with larger lenses including fast supertelephoto lenses.

**Soft Pouch (CL-S2~S4/M1/M2/L1/L2):** Accommodates a variety of lenses of different focal lengths.