

TAMRON®

LENS CATALOGUE
BETTER LENSES MEAN BETTER PHOTOGRAPHY

AF LENSES

SP AF17-35mm F/2.8-4 Di LD Aspherical [IF], AF19-35mm F/3.5-4.5, SP AF20-40mm F/2.7-3.5 Aspherical [IF],
SP AF24-135mm F/3.5-5.8 AD Aspherical [IF] MACRO, SP AF28-75mm F/2.8 XR Di LD Aspherical [IF] MACRO, AF28-80mm F/3.5-5.6 Aspherical,
SP AF28-105mm F/2.8 LD Aspherical [IF], AF28-105mm F/4-5.6 [IF], AF28-200mm Super Zoom F/3.8-5.6 Aspherical XR [IF] MACRO,
AF28-300mm F/3.5-6.3 XR Di LD Aspherical [IF] MACRO, AF70-300mm F/4-5.6 LD MACRO 1:2,
AF75-300mm F/4-5.6 LD MACRO (1:3.9), AF80-210mm F/4.5-5.6, SP AF200-500mm F/5-6.3 Di LD [IF], SP AF14mm F/2.8 Aspherical [IF],
SP AF90mm F/2.8 Di MACRO 1:1, SP AF180mm F/3.5 Di LD [IF] MACRO 1:1, SP AF300mm F/2.8 LD [IF]

MF LENSES

28-70mm F/3.5-4.5, SP 28-105mm F/2.8 LD Aspherical [IF], 28-200mm F/3.8-5.6 LD Aspherical [IF] Super, SP70-210mm F/3.5, 70-210mm F/4-5.6,
SP60-300mm F/3.8-5.4, 24mm F/2.5, SP90mm F/2.8 MACRO 1:1, SP 300mm F/2.8 LD [IF], SP500mm F/8

<http://www.tamron.com>

Technological Edge Hidden Inside High Performance Zoom Lenses

Tamron's original lens technologies hidden inside compact packages – Tamron has always been at the forefront of developing and introducing compact and high performance zoom lenses one after another that boast unique features made possible through the application of original lens technologies. Compact size that enables the user to carry his lens anywhere, outstanding depictive performance, designs deliberated for ease of use, MODs (minimum object distances) that are practical, easy to use and even allowing the user to take macro shots, to name just a few – all these features are the product of a number of advanced technologies based on Tamron's original design concepts.

The World's Smallest and Lightest* Fast F/2.8 Aperture throughout the Range

* Based on Tamron's own research of all fast zoom lenses in the same class available as of March 2003

SP AF28-75mm F/2.8

XR Di

LD ASPHERICAL [IF] MACRO



2003-2004
European Lens of the Year



2003-2004
Good Design Award,
by JIDPO, Japan



2003-2004
Lens Grand Prix
by CAPA, Japan



"Super" by Foto
Magazin, Germany,
July 03



Model A09 The lens shown is for Canon AF cameras.

SP SUPER PERFORMANCE **Di** Digitally Integrated Design
XR ASL LD IF ZL

NEW



Model A061 The lens shown is for Nikon AF cameras.

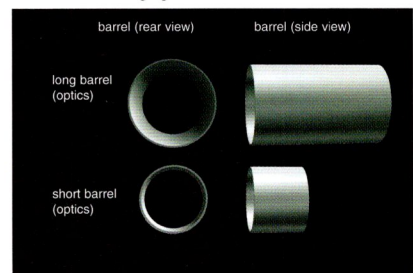
Di Digitally Integrated Design
XR ASL LD AD IF ZL SHM

XR Toward Ever Greater Compactness Featuring Key XR Technology **XR**

Reducing the total length of the optical configuration, we succeeded in developing optics that allow for a smaller lens diameter while maintaining the same aperture values as previous lenses for overall compactness. Optical power distribution was enhanced in a compact package through the innovative use of XR (Extra Refractive Index) glass, resulting in minimum aberration.

■ Achieving the same aperture value with a smaller size

With a short barrel, it is possible to obtain the same visibility (aperture value) as with a long barrel. By using this principle, we were able to shorten the optic system length for a more compact overall lens design while maintaining aperture values.



Di New Standard of Lenses for Digital Cameras

Di (Digitally Integrated Design) is a designation Tamron puts on lenses featuring optical systems designed to meet the performance characteristics of digital SLR cameras as well as film cameras.

SP SP-Series

Tamron's SP (Super Performance) series is a line of high performance lenses featuring high design specifications. In designing the SP series lenses, the first and foremost priority is put on superior specifications and outstanding performance free from cost restraints. Therefore, SP lenses featuring impressive and innovative designs are concept models among Tamron lenses.

Now Ideal for use with Digital SLR cameras
in addition to Film cameras; Redesign of
Tamron's popular 28-300mm Zoom

AF28-300mm **F/3.5-6.3 XR Di** **LD ASPHERICAL [IF] MACRO**



2002-2003
European Lens of the Year
(Bestowed to model A06)

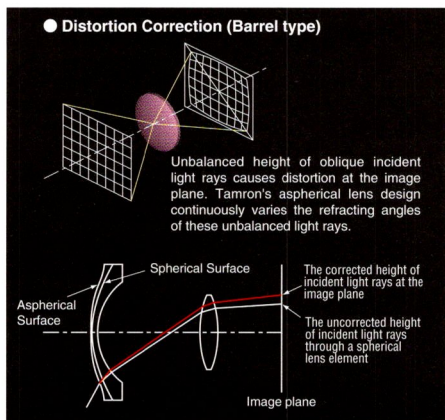
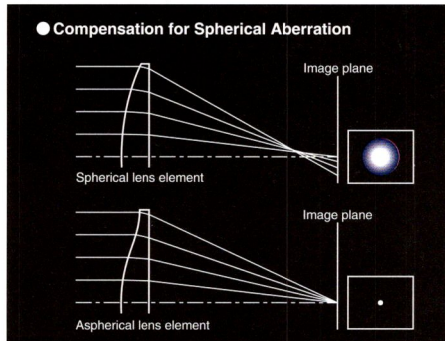
*Pentax AF mount is made of brass.

Hybrid Aspherical Elements Provide the Ultimate in Compactness and Image Quality **ASL**

To achieve the ultimate in image quality and compactness, Tamron uses three hybrid aspherical elements for the 28-200mm and the 28-300mm lenses, and four hybrid aspherical elements for the 24-135mm lens. By using the latest advances in technology, spherical aberration and image distortion have been eliminated in Tamron's high-power zoom lens series. Through the application of Hybrid Aspherical technology (which can take the place of multiple optical elements) to an LD glass, a never-before-possible level of image quality and compactness has been attained. Weighing a mere 420g (14.8oz.)*, with a retracted length of 83.7mm (3.3")* and a maximum barrel diameter of ϕ 73mm (2.9")*, Tamron's 28-300mm XR Di (model A061) achieves the amazing compactness.

*Values given are for the Nikon AF.

■ Compensation effect with an aspherical lens element (Schematic Illustration)



Internal Focusing System and Zoom Lock Feature **IF ZL**

Tamron's Internal Focusing System improves optical characteristics by minimizing illumination loss at image corners and suppresses the focusing-related aberrations. Through the reduction of M.O.D, the Internal Focusing System also provides a Maximum Magnification Ratio that allows real macro photography (28-75mm=1:3.9, 28-300mm=1:2.9, and 24-135mm=1:3.3). Tamron's other original mechanism, the Zoom Lock, is a convenient addition that prevents undesired barrel extension while carrying the camera/lens outfit around, thus protecting your lens.

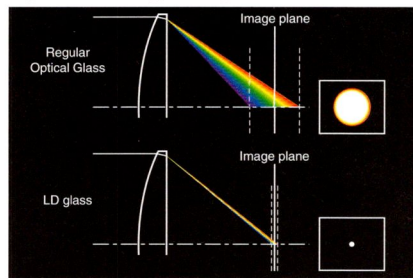
Special Glass Materials Employed for High Image Quality -LD (Low Dispersion) and AD (Anomalous Dispersion) Lenses. **AD** lenses are used in AF24-135mm and AF28-300mm.

In order to reduce and eliminate secondary (residual) chromatic aberration that cannot be removed by conventional optical glass, we have actively incorporated special, highly effective LD (Low Dispersion) and AD (Anomalous Dispersion) glass materials. These costly glass materials result in clear, vivid image quality.

About LD (Low Dispersion) Lens Elements **LD**

Chromatic aberration is a form of optical noise that reduces the sharpness of an image. LD elements are made from special glass materials with extremely low dispersion indices (characteristics that separate or refract a ray of light into rainbow colors) that effectively compensate for chromatic aberration that is particularly a problem at the telephoto end.

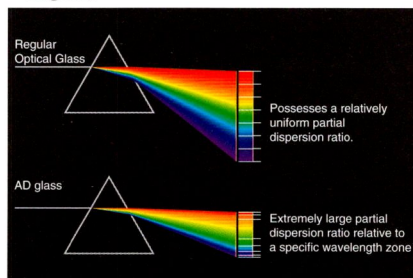
■ The difference in chromatic aberration (dispersion characteristics) between normal optical glass and LD glass elements (typical diagram)



About AD (Anomalous Dispersion) Lens Elements **AD**

Anomalous Dispersion glass is a special optical glass that delivers an abnormally large partial dispersion ratio (amount of dispersion at a given wavelength range within visible light) relative to a specific wavelength zone. By combining AD glass elements with elements made of normal glass with different dispersion characteristics, dispersion factors of a specific wavelength can be controlled, resulting in effective compensation of on-axis chromatic aberration on telephoto lenses, or lateral chromatic aberration often associated with wideangle lenses of conventional optical configuration.

■ The difference in partial dispersion factors between normal optical glass and AD glass elements (typical diagram)



Multiple-Cam Mechanism Provides Exceptional Stability and Precise Focusing throughout Entire Focal Length Range

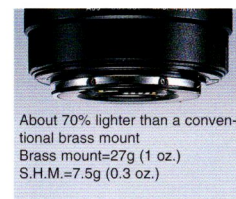
A compact, high quality high power zoom lens became a reality only when Tamron designed a lens chassis that permitted solid and smooth extension of the lens barrel. "Multiple-Cam Zoom Mechanism" is Tamron's original technology that enables four lens barrels to be extended and retracted effortlessly achieving compactness at wide-angle, while holding precise extension at telephoto.

Integrated Focus Cam Design Brings Practical Benefit in Zoom Lens Operation

Tamron's Integrated Focus Cam precisely optimizes movement of the Internal Focusing System with the Multiple-Cam Zoom Mechanism. This ingenious Focus Cam design ensures seamless performance by the highly sophisticated internal lens elements and the advanced external components.

Light and Strong-Super Hybrid Mount **SHM**

Tamron originated the Super Hybrid Mount through our proprietary and innovative injection molding technology to create an entirely new hybrid material made of stainless steel and engineering plastic.



About 70% lighter than a conventional brass mount
Brass mount=27g (1 oz.)
S.H.M.=7.5g (0.3 oz.)



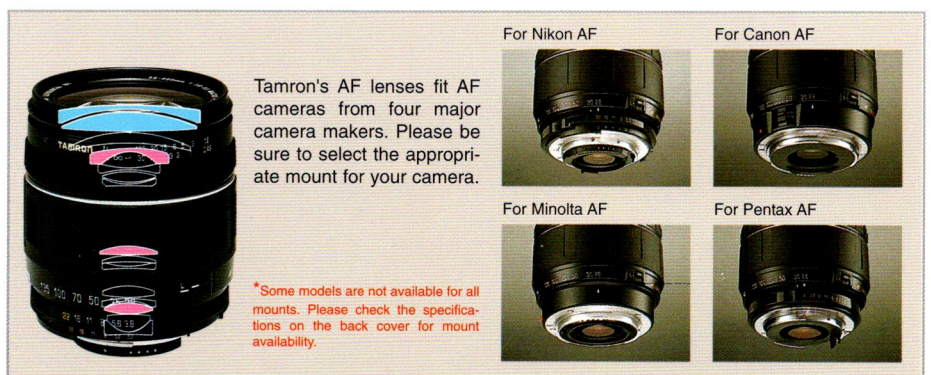
*The S.H.M. is strong since a stainless steel plate is embedded into injection-molded engineering plastic.

Lightweight and High Precision Finish Through Sophisticated Engineering Plastic Technology

To ensure high performance without adding weight, Tamron's high-power zoom lenses make extensive use of engineering plastic materials in the critical mechanical components of the lens. The polycarbonate material used in the Tamron High-Power Zoom Lens can be precisely manufactured and offers superb durability. In fact, polycarbonate is the material of choice whenever producing high-precision components that require the strength to withstand heavy use.

Sophisticated Production Technology

To manufacture a high-power zoom lens that requires such high precision processes, it is essential to establish a total production control system that ensures stringent compliance to each individual design parameter. This is in addition to developing key technologies such as Aspherical element production and Integrated Focus Cam design. Tamron is certified with ISO 9001 standards, an internationally recognized proof of thorough quality control. Tamron's high-power zoom lens series comes out of a factory that offers world-class capabilities, and is able to deliver excellent quality products to meet the satisfaction of our users.





Lens: SP AF17-35mm F/2.8-4 Model A05 Focal length:17mm Exposure: F/4 Auto ISO100



Wide Angle Zoom

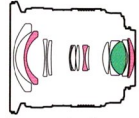
NEW



SP AF17-35mm F/2.8-4 Di LD ASPHERICAL [IF]

Model A05

Ultra wide-angle zoom lens featuring "Di" (Digitally Integrated Design) optical system to meet the performance characteristics of digital SLR cameras as well as film cameras. When mounted on an APS-C size digital SLR camera, it provides a focal length coverage equivalent to a 28-55mm, covering the desirable wide-angle to standard range. With its M.O.D. of 30cm (11.8") over the entire range, the lens offers you creative image composition by emphasizing a main subject exaggerated against the background. The use of three Hybrid Aspherical lens elements minimizes various aberrations and provides excellent image quality.



Lens construction with 14 elements in 11 groups
 ● LD element
 ● Aspherical element

SP SUPER PERFORMANCE **Di** Digitally Integrated Design **ASL LD IF**

•Filter diameter/ø77mm •Minimum focus distance/ 30cm •Mount compatible/ Canon AF, Minolta AF-D, Nikon AF-D, Pentax AF •Flower-shaped hood



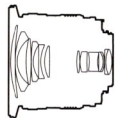
•"Super" by Foto Magazin, Germany, April 04



AF19-35mm F/3.5-4.5

Model A10

Weighing only 317g (11.2oz.), this very lightweight ultra wide angle zoom lens offers an authentic super wide-angle range with an angle of view of 97°- 63° and a close M.O.D. of 50cm. Boasting superb all-round optics that produce consistently high quality results over the whole zoom range, this lens also features a fixed front group and filter mount, facilitating the use of polarizing filters. A large flower-shaped lens hood is supplied as a standard accessory.



Lens construction with 13 elements in 11 groups

•Filter diameter/ø77mm •Minimum focus distance/ 50cm •Mount compatible/ Canon AF, Minolta AF, Nikon AF-D •Flower-shaped hood



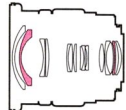
•"Super" by Foto Magazin, Germany, May 03



SP AF20-40mm F/2.7-3.5 ASPHERICAL [IF]

Model 266D

This fast ultra wide angle zoom is a logical option as a standard lens with its 40mm focal length. Thanks to a large 42.5mm diameter hybrid aspherical element in the front group, and another aspherical element in the rear group, distortion and comatic aberrations at the wide angle setting are eliminated. Use of a polarizing filter is possible thanks to the internal focusing system and large 77mm filter diameter.



Lens construction with 15 elements in 12 groups
 ● Aspherical element

SP SUPER PERFORMANCE **ASL IF**

•Filter diameter/ø77mm •Minimum focus distance/50cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D •Flower-shaped hood

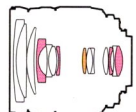
Standard Zoom



SP AF24-135mm F/3.5-5.6 AD ASPHERICAL [IF] MACRO

Model 190D

Covering everything from 24mm real wide-angle through 135mm telephoto, this light-weight, compact lens represents a new departure in the high power zoom lens concept, with outstanding optical performance characteristics of the SP series. The optical system incorporates a new AD (Anomalous Dispersion) glass element, and as many as four hybrid aspherical elements, resulting in ideal compensation of comatic aberration and astigmatism. The M.O.D. (Minimum Object Distance) of the lens is 40cm (15.7") over the entire zoom range. The 135mm telephoto achieves a maximum magnification ratio of 1:3.3, making macro photography possible.



Lens construction with 14 elements in 10 groups
 ● Aspherical element
 ● AD element

SP SUPER PERFORMANCE **ASL AD IF ZL** Zoom-Lock feature

•Filter diameter/ø72mm •Minimum focus distance/40cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF •Flower-shaped hood



•Awards 2002 "Lens of The Year" selected by Amateur Photographer, U.K.

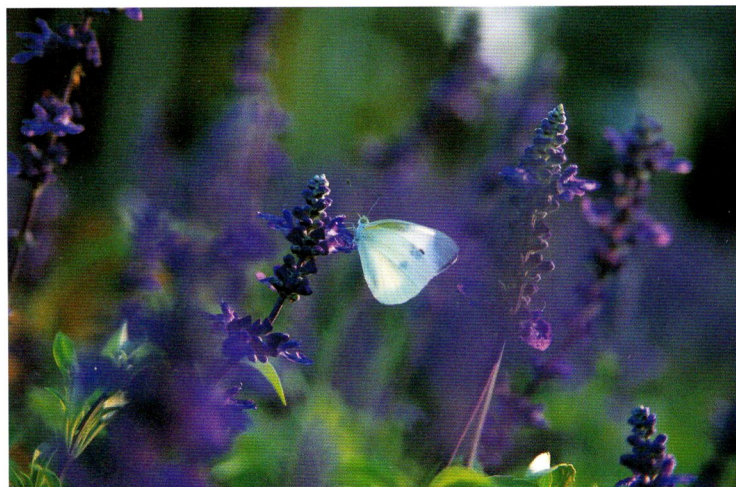


•"4 Stars" by Foto Magazin, Germany, April 01



Lens: SP AF28-75mm F/2.8 Model A09 Focal length:75mm Exposure: F/5.6 Auto ISO100

Lens: AF28-200mm F/3.8-5.6 Model A03 Focal Length:200mm Exposure: F/8 Auto ISO 100



Lens: SP AF28-75mm F/2.8 Model A09 Focal Length: 75mm Exposure: Aperture fully opened Auto ISO50



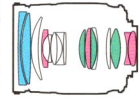
Standard Zoom



The lens shown is for Canon AF cameras.

SP AF28-75mm F/2.8 XRD Di LD ASPHERICAL [IF] MACRO Model A09

Now realized thanks to XR technology, Tamron brings you this light and small fast zoom. Unlike typical fast zooms, it weighs only 510g (18.0oz.), with filter size of 67mm and overall length of 92mm (3.6"). The optical performance is of course outstanding with the employment of an optical system using two XR elements, three LD elements, and four aspherical elements. In addition, the lens features "Di" (Digitally Integrated Design) optical system to meet the performance characteristics of digital SLR cameras as well as film cameras.



Lens construction with 16 elements in 14 groups
 ● LD element
 ● XR (Extra Refractive Index) glass
 ● Aspherical element

SP SUPER PERFORMANCE **Di** Digitally Integrated Design **XR ASL LD IF ZL** Zoom-Lock feature

•Filter diameter/ø 67mm •Minimum focus distance: 33cm (13.0") Mount compatible/ Canon AF, Minolta AF-D, Nikon AF-D, Pentax AF
 •Flower-shaped hood



2003-2004 European Lens of the Year



2003-2004 Good Design Award, by JIDPO, Japan



"Super" by Foto Magazin, Germany, July 03



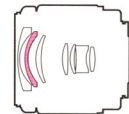
2003-2004 Lens Grand Prix by CAPA, Japan



Model 177D Silver version (277D) is also available

AF28-80mm F/3.5-5.6 ASPHERICAL Model 177D/277D

A standard zoom lens from a wide 28mm to a medium telephoto range of 80mm. The use of aspherical elements in the front group reduces the number of elements required, and the use of strong engineering plastic in the barrel makes the body a light 230g (8.1oz.)*.



Lens construction with 7 elements in 7 groups
 ● Aspherical element

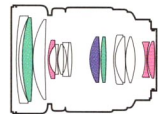
ASL

•Filter diameter/ø58mm •Minimum focus distance/70cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF •Hood

SP AF28-105mm F/2.8 LD ASPHERICAL [IF] Model 276D



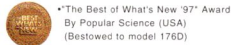
This benchmark in standard lenses extends from 28mm to 105mm all with a fast constant 2.8 maximum aperture, providing excellent optical performance. The use of four large diameter aspherical elements and three LD (Low Dispersion) glass elements reduces aberrations while minimizing light fall-off at the corners.



Lens construction with 15 elements in 13 groups
 ● Aspherical element
 ● LD element
 ● LD-Hybrid aspherical element

SP SUPER PERFORMANCE **ASL LD LAH IF**

•Filter diameter/ø82mm •Minimum focus distance/50cm (28,105mm), 44cm (70-85mm) •Mount compatible/Canon AF, Minolta AF, Nikon AF-D •Flower-shaped hood

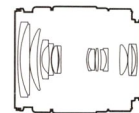


*The Best of What's New '97 Award By Popular Science (USA) (Bestowed to model 176D)



AF28-105mm F/4-5.6 [IF] Model 179D

Tamron's conveniently small and lightweight AF28-105mm is the perfect standard zoom providing medium telephoto, ideal for close-ups and zooming out to true wide-angle for group shots, tight indoor spaces, and landscapes. Internal Focusing (IF), once only available in professional lenses, permits easy handling and practical use of filters.



Lens construction with 15 elements in 12 groups

IF

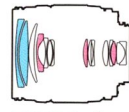
•Filter diameter/ø62mm •Minimum focus distance/50cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF
 •Flower-shaped hood



Model A03

AF28-200mm Super Zoom F/3.8-5.6 ASPHERICAL XR [IF] MACRO Model A03/A03S

An amazingly compact and lightweight 28-200mm high power zoom lens. This remarkable lens achieves high power zoom performance with the compact size of a standard zoom lens. It even offers macro capabilities with a minimum object distance of just 49cm (19.3") throughout the entire zoom range and a maximum magnification ratio of 1:4 (at 200mm). Through the innovative use of XR (Extra Refractive Index) glass and aspherical elements, Tamron has achieved a 25% reduction in size and a 27% reduction in weight over the previous model (Model 371D) along with a two-step smaller filter diameter of ø62mm (formerly ø72mm) without compromising the superior image quality.



Lens construction with 15 elements in 14 groups
 ● XR (Extra Refractive Index) element
 ● Aspherical element

*Since an internal focusing system is used, the lens provides a wider field of view at shooting distances shorter than infinity when compared with conventional lenses at equivalent focal lengths.

XR ASL IF ZL Zoom-Lock feature

•Filter diameter/ø62mm •Minimum focus distance/49cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF
 •Flower-shaped hood



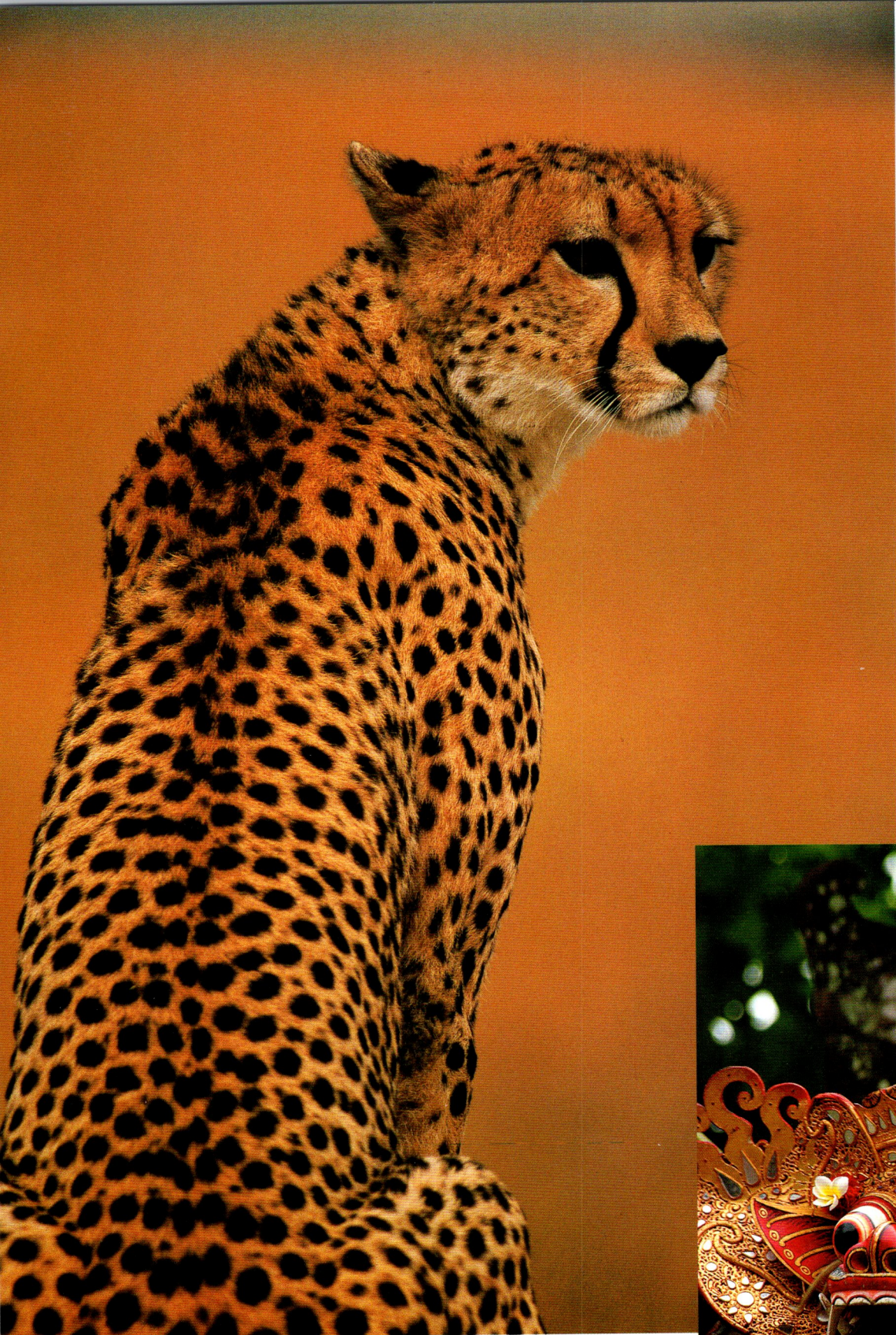
•European Photo & Imaging Awards "Best lens in Europe 2001/2002"



*4 Stars by Foto Magazin, Germany, March 02



Model A03S



Lens: SP AF200-500mm F/5-6.3 Model A08 Focal Length:500mm Exposure: Aperture fully opened Auto ISO100



Lens: AF28-300mm F/3.5-6.3 Model A061 Focal Length:300mm Exposure: F/6.7 1/90 sec. Auto ISO200 WB:daylight



Standard Zoom

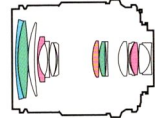
NEW



AF28-300mm F/3.5-6.3 XR Di
LD ASPHERICAL [IF] MACRO

Model A061

The world's smallest and lightest¹⁾, Tamron's new 28-300mm zoom lens now features our "Di"²⁾ design, making it the ideal lens for use with both film and digital cameras. The lens features XR technology that contributes to its weight of only 420g (14.8oz.) and its compact length of just 83.7mm (3.3"). It provides ultimate color, contrast and distortion correction due to its complex optical design that includes LD, AD and Aspherical elements. The M.O.D. of only 49cm (19.3") throughout the entire range provides an outstanding 1:2.9 maximum macro magnification for true macro photography (at 300mm).



Lens construction with 15 elements in 13 groups
 ● XR (Extra Refractive Index) Glass
 ● LD element
 ● AD element
 ● Aspherical element
 Note: The 8th element is an AD element featuring aspherical processing.

¹⁾As of June, 2004. Based upon Tamron research of lenses in the same class.
²⁾"Di" (Digitally Integrated Design) is the designation Tamron puts on lenses featuring optical systems designed to meet the performance characteristic of digital SLR cameras as well as film cameras.

*Since an internal focusing system is used, the lens provides a wider field of view at shooting distances shorter than infinity when compared with conventional lenses at equivalent focal lengths.



*Pentax AF mount is made of brass.
 •Filter diameter/ø62mm •Minimum focus distance/49cm •Mount compatible/Canon AF, Minolta AF-D, Nikon AF-D, Pentax AF
 •Flower-shaped hood



The Zoom-Lock feature keeps the lens retracted for photographers on the go.

The Zoom-Lock mechanism is a feature that turns practicality into necessity for photographers who depend on the zoom lens. With frequent use as a standard zoom, the capability of the lens to lock at the most compact zoom setting is a convenient addition that prevents undesired barrel extension while carrying the camera/lens outfit around.



Telephoto Zoom

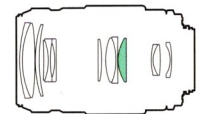


Model 572D
 Silver version (772D) is also available.

AF70-300mm F/4-5.6 LD MACRO 1:2

Model 572D/772D

This is the definitive lightweight, compact telephoto macro zoom with a maximum magnification ratio of 1:2 at the 300mm setting. It's ideal for shooting subjects that are difficult to approach such as sports and theatrical events. By switching to macro mode, subjects as close as 95cm (3.1ft) can be shot within the focal range of 180-300mm, for true macro photography. The optical system incorporates an LD (Low Dispersion) lens, resulting in clear sharp images free from chromatic aberration.



Lens construction with 13 elements in 9 groups
 ● LD element

LD
 •Filter diameter/ø62mm •Minimum focus distance/1.5m (95cm with Macro setting) •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF •Hood

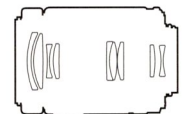
*AF75-300mm F4-5.6 LD MACRO (1:3.9) (model 672D) is also available. See page 14 and the specification on the back cover for the detail.



AF80-210mm F/4.5-5.6

Model 278D

This uniquely designed compact zoom lens weighs only 281g (9.9oz.). The lens' compactness makes it ideal for travel and hiking. The telephoto range from 80mm to a long 210mm is useful for shooting portraits to wildlife.



Lens construction with 9 elements in 8 groups

•Filter diameter/ø52mm •Minimum focus distance/1.5m •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF •Hood

NEW

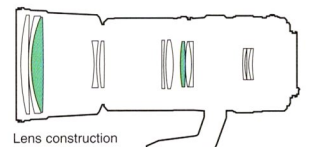


The lens shown is for Canon AF cameras.

SP AF200-500mm F/5-6.3 Di LD [IF]

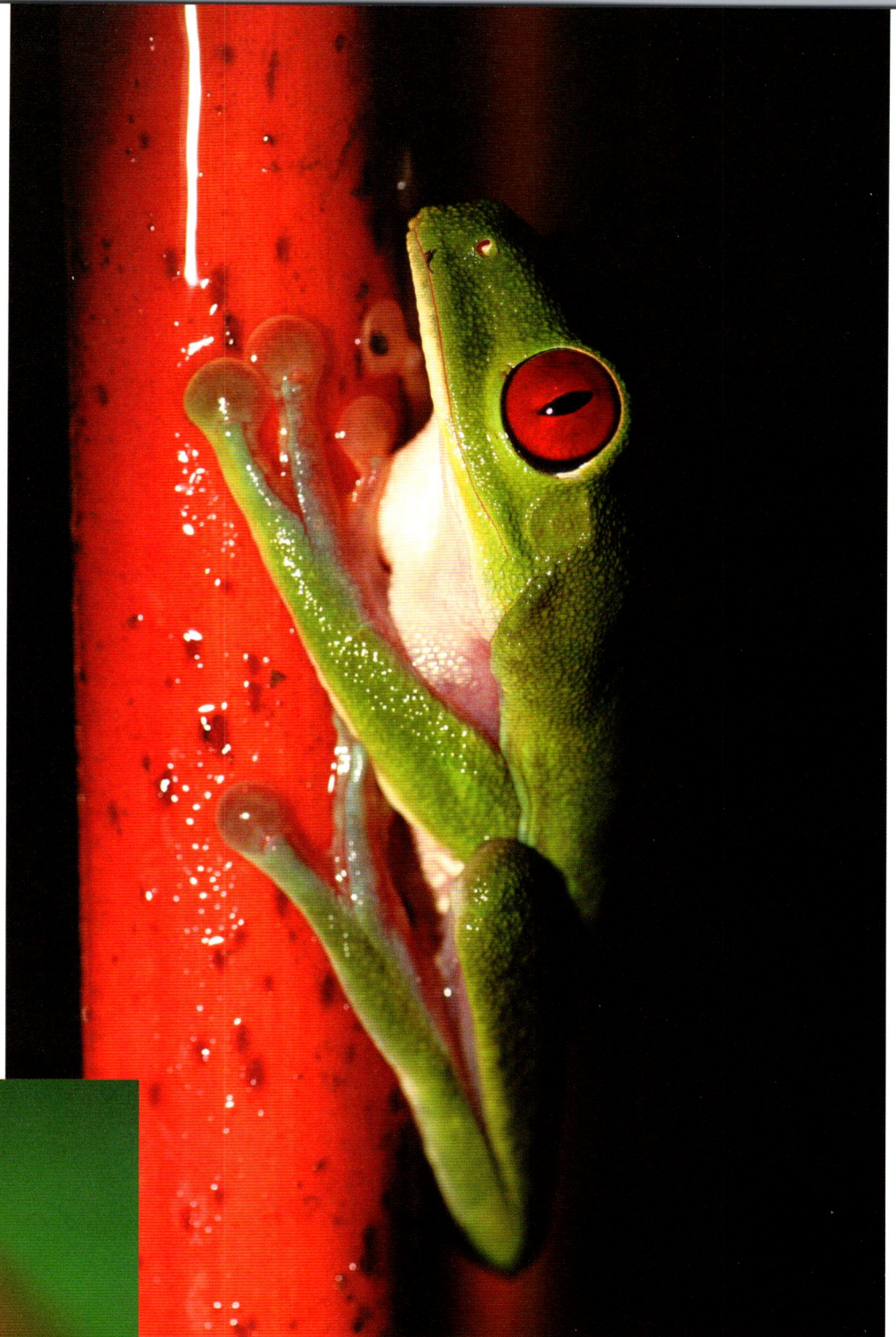
Model A08

A true ultra-telephoto zoom lens that covers up to 500mm. The lens uses two LD elements in order to minimize on-axis chromatic aberrations that are likely to become a problem in conventional telephoto zoom lenses, thus providing clear images with vivid color rendition. When used with an APS-C size digital SLR camera, the lens provides an angle of view equivalent to 310-760mm (using a conversion to 35mm). Another great feature is the detachable Filter Effect Control (FEC) adapter designed to allow convenient rotation of a PL filter even when the hood is attached.

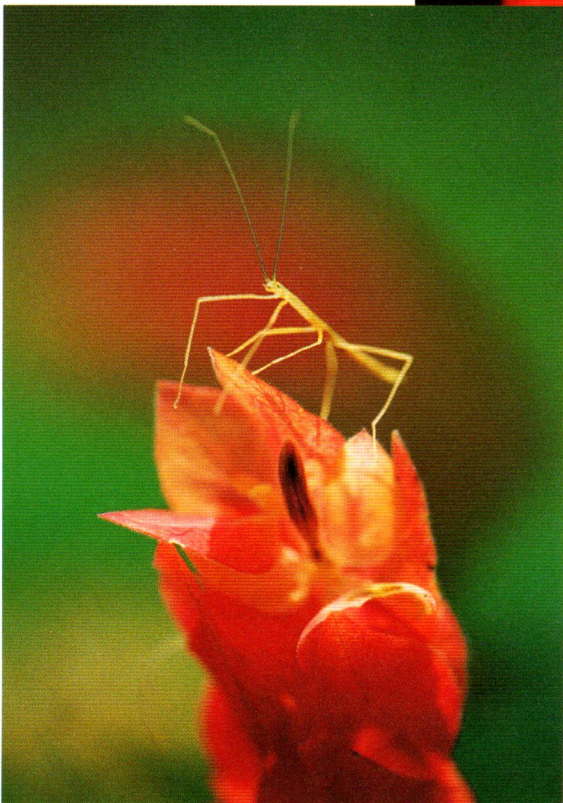


Lens construction with 13 elements in 10 groups
 ● LD element

SP SUPER PERFORMANCE **Di** Digitally Integrated Design **LD IF**
 •Filter diameter/ø86mm •Minimum focus distance/2.5m •Mount compatible/Canon AF, Minolta AF, Nikon AF-D •Hood



Lens:SP AF90mm F/2.8 Model 272E Exposure:F/8 1/60sec. ISO100 WB:flash



Lens: SP AF180mm F/3.5 Model B01 Exposure: Aperture fully opened Auto ISO100



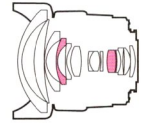
Single-Focal Length Lens



SP AF14mm F/2.8 ASPHERICAL [IF]

Model 69E

SP AF14mm F/2.8 Aspherical [IF] is an ultra wideangle lens that creates a perspective far beyond the conventional ultra-wide. With its larger 2.8 aperture, the main subject practically jumps out of the image. By using two Hybrid Aspherical lens elements, this lens delivers high quality images with minimal light fall off at the image corners. To optimize handling, the lens incorporates a push/pull AF/MF switchover mechanism on the focus ring.



Lens construction with 14 elements in 12 groups
 ● Aspherical element

* The one-touch switchover function is available on Nikon AF-D and Canon AF mounts only.

The Minolta AF and the Pentax AF mounts require switchover in two steps.

SP SUPER PERFORMANCE ASL IF AF/MF switch-over mechanism on the focus ring

•Filter/ Gelatin filter holder at the rear of lens •Minimum focus distance/20cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF



"Super" by Foto Magazin, Germany, February 02

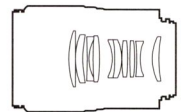


NEW

SP AF90mm F/2.8 Di MACRO1:1

Model 272E

Tamron's world renowned 90mm Macro has evolved even further by incorporating Tamron's "Di" (Digitally Integrated) optical design, making it ideal for use with both digital and film cameras. While inheriting the same optical configuration of the previous model, the "Di" version features a new optical design applied to its coated surfaces. The lens is recommended as an easy to use portrait macro lens for use with a film camera, and as a convenient telephoto macro on APS-C size digital cameras since it provides a 35mm-equivalent angle of view of 140mm.



Lens construction with 10 elements in 9 groups

AF/MF switch-over mechanism on the focus ring

The one-touch switchover function is available on Nikon AF-D and Canon AF mounts only. The Minolta AF and the Pentax AF mounts require switchover in two steps.

SP SUPER PERFORMANCE Di Digitally Integrated Design

•Filter diameter/ø55mm •Minimum focus distance/29cm •Mount compatible/Canon AF, Minolta AF, Nikon AF-D, Pentax AF •Hood



•European-Lens-Of-the-Year '97-'98 (Bestowed to model 72E)

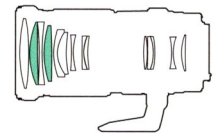


The lens shown is for Canon AF cameras.

SP AF180mm F/3.5 Di LD [IF] MACRO1:1

Model 801

With soft out-of-focus backgrounds and superior optical performance, this 180mm macro lens exhibits its great power when taking macro shots where you may otherwise not have been able to get close enough to the subject. The lens features the new Filter Effect Control ring that allows rotation of a PL filter when the hood is attached, and an AF/MF one-touch switchover mechanism for easy handling. In addition, the lens features "Di" (Digitally Integrated Design) optical system to meet the performance characteristics of digital SLR cameras as well as film cameras.



Lens construction with 14 elements in 11 groups
 ● LD element

* The one-touch switchover function is available on Nikon AF-D and Canon AF mounts only.

The Minolta AF mount requires switchover in two steps.

SP SUPER PERFORMANCE Di LD IF AF/MF switch-over mechanism on the focus ring

•Filter diameter/ ø72mm Minimum focus distance: 47cm (18.5") •Mount compatible/ Canon AF, Minolta AF-D, Nikon AF-D •Hood



2003-2004 Good Design Award, by JIDPO, Japan



"Super" by Foto Magazin, Germany, October 03

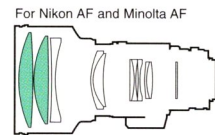


For Nikon and Minolta AF

SP AF300mm F/2.8 LD [IF]

Model 360E

Tamron's fast fixed telephoto delivers remarkable and exacting performance demanded by professionals. Two large LD (Low Dispersion) glass elements in the front group provide high contrast and crystal-clear image quality at F/2.8. Nine specially-shaped aperture blades form a nearly perfect circle to create excellent background blur for portraits. The true value of the lens is apparent when photographing sports, low-light theatre performances, and wildlife.



For Nikon AF and Minolta AF

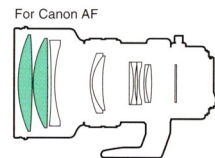
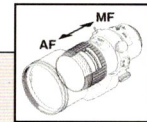


For Canon AF

SP SUPER PERFORMANCE LD IF

AF/MF switch-over mechanism on the focus ring

Switching between AF and MF is easily accomplished by sliding the focus ring back and forth. Manually focusing is smooth and precise with the wide focusing ring. •For Canon AF only.



For Canon AF

Lens construction with 10 elements in 7 groups
 ● LD element

•Filter diameter/ø112mm (rear:43mm) •Minimum focus distance/2.5m •Mount compatible/Canon AF, Minolta AF, Nikon AF

•For Nikon AF and Minolta AF model (Hood, case, rear normal filter, hold grip).

•For Canon model (Hood, case, exclusive tripod stand, rear normal filter, exclusive C-PL rear filter)



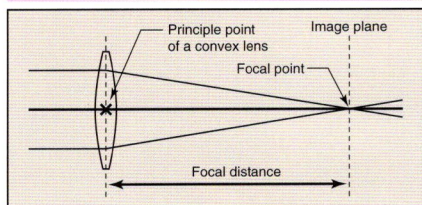
"Super" by Foto Magazin, Germany, September 00

Differences between Wideangle and Telephoto

What is focal length?

While a photographic lens comprises multiple lens elements, it can be regarded as a single convex element. The focal length is defined as a distance from the center of such a convex element (principle point) to the focal point (image plane) and it is one of the most decisive factors that determines the characteristics of a lens.

*The focal length of a photographic lens is established with the subject positioned at the infinity point.



Angle of View (Telephoto & Wideangle Lens)

The area size captured by a photographic lens can be expressed as a diagonal angular field called Angle of View. Generally speaking, a focal length range that provides a similar perspective to the human eye is considered to be somewhere between 40-60mm. With this established as a standard focal length, those with shorter focal lengths are called "wide-angle" and those with longer focal lengths are called "telephoto". The shorter the focal length becomes, the wider the angle of view (wide-angle), while the longer it becomes, the narrower the angle of view (telephoto).

*The relationship between focal length and angle of view is generally consistent regardless of the lens' focal length. However, there are cases where different angles of view are observed depending on the difference in the focusing system of a lens and shooting distance.

Perspective (Sense of distance)

A photographic lens provides a visual effect, making closely located subjects larger while remotely located subjects smaller. As the focal length becomes shorter in a wideangle lens, this perspective difference expands making closely located subjects even bigger and remotely located ones even smaller (exaggerated perspective).

In contrast, in a telephoto lens, as focal lengths become longer, less difference is observed between close and distant subjects, making it appear as if they are closer regardless of the distance between them (compressed perspective).

Depth of Field

When focused on a subject, there are areas in front of and behind the main subject where details are sharp. This area is referred to as depth of field. When the sharp image area is narrow, it is expressed as "shallow depth of field". When it is wide, it is expressed as "deep depth of field". The depth of field becomes shallower as the lens aperture goes toward a full open position (or the faster the lens' maximum aperture becomes). It becomes deeper when the aperture gets closer to the fully stopped down position (or the slower the lens' maximum aperture becomes). Also, a wide-angle lens delivers deeper depth of field compared with a telephoto lens.

Zoom Lens vs. Fixed Focal Lens

Zoom lenses offer versatility

A zoom lens allows continuous shift of focal length without shifting the focus point. Because it delivers various angles of view, one lens can serve as multiples of fixed focal length lenses. Tamron offers a wide array of zoom lenses covering virtually all of the focal lengths required for normal shooting conditions, including those with fast apertures.

Standard range zoom	Standard zoom (28-80mm) Telephoto zoom (80-210mm)
Advanced range zoom	Ultra wide-angle zoom (17-35mm) High-image-quality telephoto zoom (70-300mm LD) Ultra telephoto zoom (200-500mm)
High-power zoom	Wide-angle high-power zoom (24-135mm) Standard high-power zoom (28-105mm) Ultra-high-power zoom (28-200mm, 28-300mm)
High-speed zoom	Wide-angle zoom (20-40mm F/2.7-3.5) Standard zoom (28-75mm F/2.8)

High image quality and compact fixed focal lens

A fixed focal length lens can deliver outstanding image quality and dimensional compactness because it can be designed with specific photographic needs and applications in mind. Tamron offers a line of fixed focal lens models applying the sophisticated technologies developed for making zoom lenses of various kinds.

- Ultra wide-angle lens (14mm)
- Macro lens (90mm F/2.8 1:1, 180mm F/3.5 1:1)
- Fast-aperture telephoto lens (300mm F/2.8)
- Catadioptric lens (500mm F/8*)

*Available in manual focus model only

Macro Photography (Close-up photography)

Features of macro lens

A macro lens is designed to capture a tiny subject as a bigger image, while suppressing the aberrations that tend to be more noticeable in closer focusing distances.

Macro ratio (Magnification ratio)

A macro magnification is expressed in 1:x, which is a ratio of the actual size of a subject, "1", to the size of the subject image reproduced on the film plane, "1/x". Therefore, the larger the x value becomes, the smaller the reproduced image on the film plane becomes. For example, an image of a coin reproduced on film as the same size as the actual coin is 1:1 macro, while the same image reproduced at 1/2 of the original size is 1:2 macro. The macro ratio is also referred to as magnification ratio, and the maximum ratio of a lens' reproduction capability is designated as "maximum magnification ratio".

Macro ratio

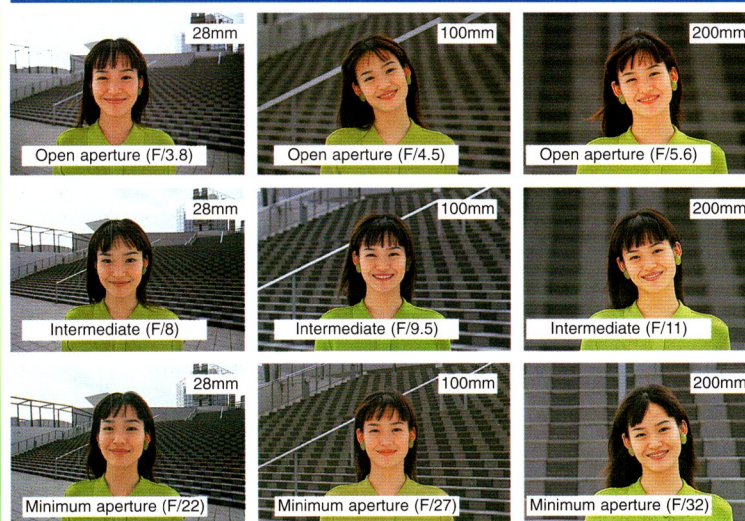


Macro photography with a zoom lens

As mentioned above, macro photography is a specific type of shooting that magnifies the size of a subject by a certain factor (magnification ratio) of its actual size (e.g. 1:1, 1:2, 1:4). The same effect can be achieved with a zoom lens or a telephoto lens as long as the lens offers a sufficient magnification ratio. Tamron puts the designation "MACRO" on a lens that provides a magnification ratio of 1:4 or greater, indicating that the lens is capable of providing macro results.

Changes in Perspective

Changes in Depth of Field



Changes in Perspective

Capturing a subject the same size with different focal length lenses yields very different results. When using a wider lens, more of the background is depicted. In contrast, with a telephoto focal length, the background view is narrower and will appear closer to the subject (compressed).

Changes in Depth of Field

Depth of field varies depending on the focal length lens used even when shot at the same aperture. The wider the focal length, the more depth of field produced. Depth of field becomes shallower as the focal length changes towards more telephoto. The out-of-focus background effect changes depending on the focal length and lens aperture combination.

Technologies to attain the highest level of image quality

BBAR Coating

To suppress reflections and dispersion on the lens element surface that result in reduced light transmission or cause flare and ghost images, Tamron developed a proprietary BBAR (Broad-Band, Anti-Reflection) multiple-layer coating technique that also renders the best possible color balance. It is applied to a majority of Tamron lenses. A new BBAR coating, which successfully increases transmission of both longer and shorter wavelength ranges, has been developed and is applied to latest lenses.

BBAR Coating

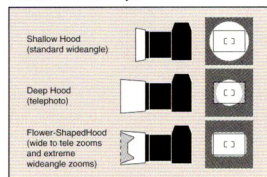


Hood

Most Tamron lenses, excluding just a few models, are supplied with a lens hood as a standard accessory. The Tamron lens hood is designed as an integral part of the optics to provide the maximum shading for each lens. This is the case even for those made for a zoom lens, where the wide-end of the focal length range inevitably becomes the benchmark for the optical design.

For lenses with an Internal Focusing system that cover wideangle ranges, a flower-shaped lens hood is employed. This type of hood delivers the best possible shading effect even when shooting at telephoto because the edge of the hood is extended to the maximum length in the areas corresponding to the top and bottom of the image, while being cut back in the areas that correspond to both sides of the image in order to avoid vignetting at any of the four corners.

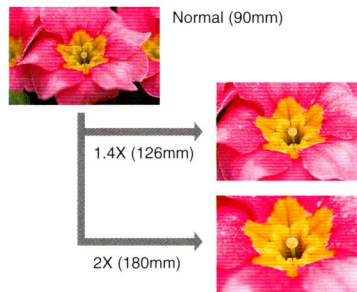
Effect of Lens Hood Style



Tamron tele-converters provide powerful and creative options for your telephoto photography

Tele-converters

Tamron's tele-converters simply fit between a lens and a camera body. This increases the focal length and gives you extended telephoto capabilities so you can take photos with greater magnification from the same camera position.



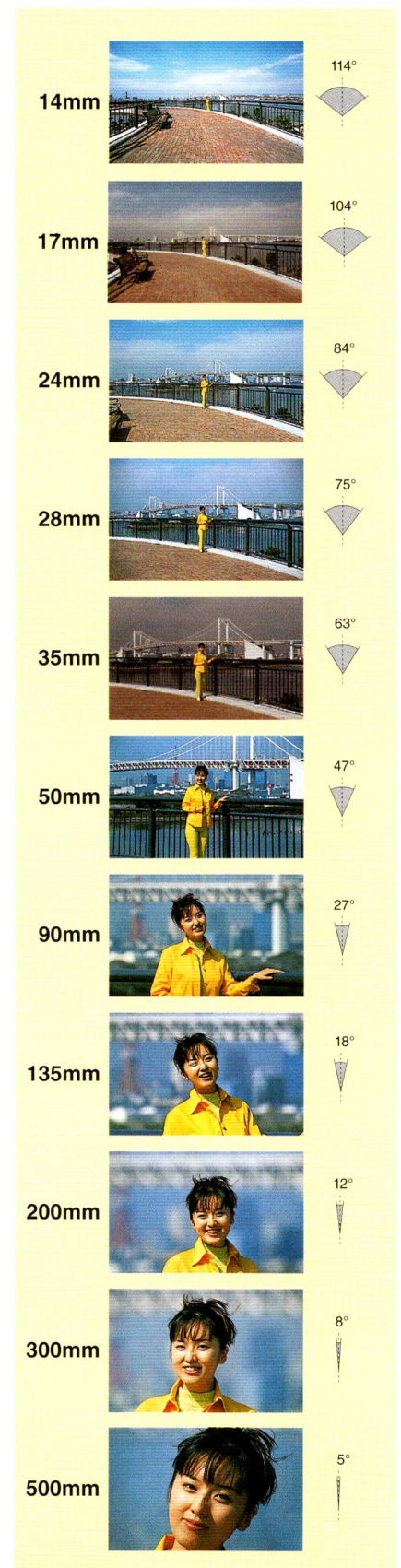
•To attach a lens where the maximum aperture is F/3.5 or slower (e.g., High power zoom lenses) is not recommended.

•In general, tele-converters are not recommended for use with wideangle lenses (those shorter than 50mm). For best results, use the Tamron tele-converter with telephoto lenses ranging from 50mm to 135mm.

•When using a macro lens with a tele-converter, use the manual focus.

•Please read the instruction manual for the lens for information about the compatibility of the tele-converters with each lens.

Different Angles of View with different focal lengths



Tamron Adaptall-2 Interchangeable Mount system

Tamron stands apart from other lens manufacturers with its use of an interchangeable mount system instead of a fixed mount. The interchangeable mount system makes Tamron's manual focus lenses compatible with a wide range of SLR cameras.

Adaptall-2 Mounts Available for:

Canon FD Series (51C)	Nikon AI Series (60C)	Ricoh XR-P Series (61C)
Contax/Yashica Series (55C)	Olympus OM Series (54C)	Rollei SL-35 Series (12C)
Fujica AX Bayonet Series (56C)	Pentax ES Series (16C)	"C" mount for VTR /CCTV cameras and 16mm movie cameras
Mamiya ZE Series (57CB)	Pentax KA Series (63C)	*Model 55BB only
Minolta MD Series (52CB)	Pentax/Praktica Screw mount (01C)	
Minolta MF adapter (65C)*	Praktica B200 Series (14C)	



AF Lenses

C_{AF} for Canon-AF Mount **N_{AF}** for Nikon-AF Mount
M_{AF} for Minolta-AF Mount **P_{AF}** for Pentax-AF Mount



NEW
SP AF17-35mm
F/2.8-4 **Di** LD ASPHERICAL [IF]
Model A05
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Minolta AF /Nikon AF is "D" compatible.



AF19-35mm
F/3.5-4.5
Model A10
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



SP AF20-40mm
F/2.7-3.5 ASPHERICAL [IF]
Model 266D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



SP AF24-135mm
F/3.5-5.6 AD ASPHERICAL [IF] MACRO
Model 190D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.

The lens shown is for Canon AF cameras.



SP AF28-75mm F/2.8
XR Di
LD ASPHERICAL [IF] MACRO
Model A09
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Minolta AF /Nikon AF is "D" compatible.



Model 177D
AF28-80mm
F/3.5-5.6 ASPHERICAL
Model 177D/277D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



Model 277D



SP AF28-105mm
F/2.8 LD ASPHERICAL [IF]
Model 276D
C_{AF} M_{AF} N_{AF} P_{AF} (Bestowed to model 176D)

*The lens for Nikon AF is "D" Compatible.



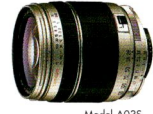
AF28-105mm
F/4-5.6 [IF]
Model 179D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



Model A03
AF28-200mm Super Zoom
F/3.8-5.6 ASPHERICAL **XR** [IF] MACRO
Model A03/A03S
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



Model A03S



NEW
AF28-300mm
F/3.5-6.3 **XR Di**
LD ASPHERICAL [IF] MACRO
Model A061
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Minolta AF /Nikon AF is "D" compatible.



AF70-300mm F/4-5.6
LD MACRO 1:2
Model 572D/772D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



Model 572D



AF75-300mm F/4-5.6
LD MACRO 1:3.9
Model 672D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



AF80-210mm
F/4.5-5.6
Model 278D
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



NEW
SP AF200-500mm
F/5-6.3 **Di** LD [IF]
Model A08
C_{AF} M_{AF} N_{AF}

*The lens for Minolta AF /Nikon AF is "D" compatible.



SP AF14mm
F/2.8 ASPHERICAL [IF]
Model 69E
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Nikon AF is "D" Compatible.



NEW
SP AF90mm
F/2.8 **Di** MACRO 1:1
Model 272E
C_{AF} M_{AF} N_{AF} P_{AF}

*The lens for Minolta AF /Nikon AF is "D" compatible.

The lens shown is for Canon AF cameras.



SP AF180mm F/3.5
Di LD [IF] MACRO 1:1
Model B01
C_{AF} M_{AF} N_{AF}

*The lens for Minolta AF /Nikon AF is "D" compatible.



SP AF300mm F/2.8 LD [IF]
Model 360E
C_{AF} M_{AF} N_{AF}

For Nikon AF-D and Minolta AF



For Canon AF

MF Lenses in TAMRON's Unique Adaptall Interchangeable Mount System



28-70mm
F/3.5-4.5
Model 159A



SP28-105mm
F/2.8 LD ASPHERICAL [IF]
Model 176A



28-200mm F/3.8-5.6
LD ASPHERICAL [IF] *Super*
Model 171A



SP70-210mm F/3.5
Model 19AH



70-210mm F/4-5.6
Model 158A



SP60-300mm F/3.8-5.4
Model 23A



24mm F/2.5
Model 01BB



SP90mm F/2.8 MACRO 1:1
Model 72B

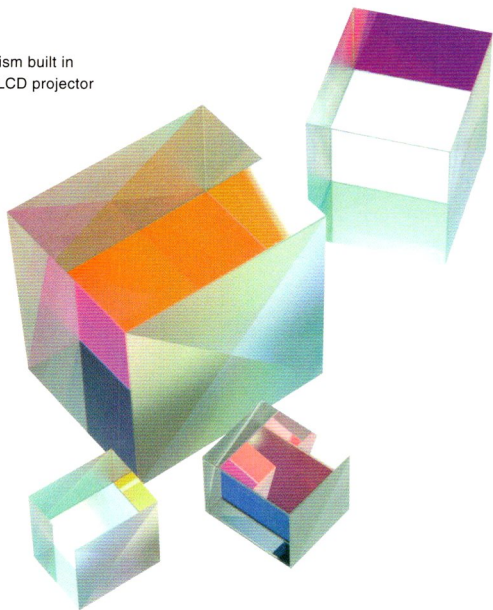


SP300mm F/2.8 LD [IF]
Model 360B



SP500mm F/8
Model 55BB

The picture:
Highly accurate cross-prism built in
the optical engine of an LCD projector

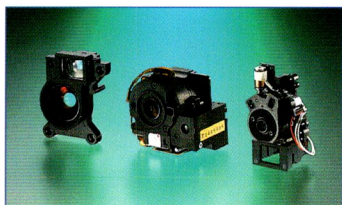


Eyes on Diversity Cutting-Edge Optical Solutions for an Array of Imaging Devices

Tamron is not only a manufacturer of interchangeable lenses for 35mm SLR cameras and medium format cameras, but also a reliable supplier of sophisticated optical products for a wide range of industrial fields.

Keeping our "Eyes on Diversity" is essential these days for the many industrial fields we service. Quality optical devices, in which Tamron specializes, are now built into various systems in today's industrial world. We at Tamron are committed to the challenge of reaching new markets in this wide field of optics by utilizing our accumulated technologies to their full degree.

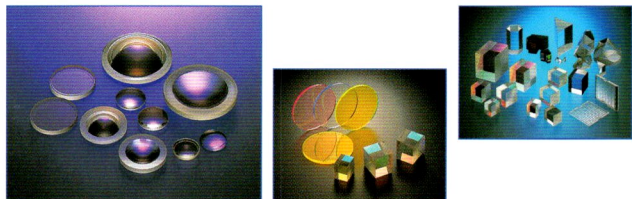
For more details : Tel +81-(0)3-3916-0131 Fax +81-(0)3-3916-1860 Tamron Co., Ltd. (Japan)



■ Digital Camera Lenses ■ Video Camera Lenses

OEM Products

Tamron has contributed to the growth of the digital camera market and the digital image revolution by supplying optical lens units designed to meet the needs of the era's mega-pixel CCDs. Our optical know-how, therefore, plays a key role in the OEM customers' attempts to attain higher market share. Also for supply to OEM customers, Tamron makes high performance, high definition, lightweight and compact lens units for home video cameras by making the most of our technologies and expertise accumulated over the years.



■ High Precision Prisms ■ Optical Coating Products ■ Aspherical/ Spherical Lens Elements
■ Ultra High Precision Test Plates (for inspection of lens surface accuracy)
■ Molding Die Production For High-Precision Engineering Plastic Injection
■ Projection Lenses

Optical Devices

As a comprehensive manufacturer of quality optics, Tamron has produced a variety of optical devices requiring high accuracy and advanced technologies by utilizing our technological edge in designing, processing and measuring. The optical devices that Tamron manufactures for sophisticated industrial applications include various aspherical lens elements, special prisms such as cross-prisms for LCD projectors, devices for laser optical systems, dichroic filter mirrors for color separation, polarizing beam splitters, thin-film layer coated products featuring very special multi-layer coatings, ultra precision standard gauge glass required for prompt and accurate evaluation of lens surfaces and so on.



■ Vari-focal Lenses ■ High Resolution Lenses for Factory Automation ■ Motorized Zoom Lenses
■ Fixed-Focal Lenses for Security

CCTV [Surveillance] Cameras and Lenses

As a pioneer in this field as well, Tamron has always held the leading position in the industry since introducing "vari-focal lenses": epoch-making surveillance camera lenses that meet the needs of installers requiring high performance, compact and versatile lenses. Tamron also makes a wide array of CCTV cameras and lenses including ultra high performance lenses for image processing required for FA (Factory Automation) applications, integrated lens/camera ZoomCam and more.



■ RF645 [6X4.5]



■ ETRSi [6X4.5]



■ SQ-Ai [6X6]

Medium Format Cameras

In the field of medium format cameras that enable photographers to enjoy advanced photographic techniques, Tamron makes cameras both in 6x6 and 6x4.5 formats to respond to the various needs of professional and serious amateur photographers alike. By offering two lines of medium format SLR systems, photographers are able to enjoy a combination of lenses, film backs and finders that lead to creative freedom. Our 6x4.5 Rangefinder camera is designed for the serious amateur who enjoys photography as a hobby.

Tamron's environmental activity

Tamron has enacted an environmental policy to preserve the environment in the best possible ways.

Environmental Management Philosophy

In accordance with its corporate management philosophy, Tamron's goal is to create and deliver superior quality products and services to meet customer needs. Furthermore, each Tamron employee is fully committed to the preservation of the global environment at every level and for each facet of company activities. At Tamron, we recognize the significance of our social responsibilities.

Specifications of Tamron Lenses

AF Lenses

Model	Lenses	Lens Construction (Groups/Elements)	Angle of View	Type of Zooming	Diaphragm Blade Number	Minimum Aperture (F)	Minimum Focus in.(m)	Max Mag. Ratio	Filter Diameter (ømm)	Weight oz.(gm)	Diameter x Length in.(mm)	Accessory		Mount					Remarks
												Lens Hood	Case	for Canon AF	for Minolta AF	for Nikon AF	for Pentax AF		
A05	SP AF17-35mm F/2.8-4 Di LD ASPHERICAL [IF] NEW	11-14	104°-63°	Rotation	7	22	11.8 (0.3)	1:5.4	77	15.5 (440)	ø3.3 X 3.4 (ø83.2 X 86.5)	AD05	○	○	○	○			
A10	AF19-35mm F/3.5-4.5	11-13	97°-63°	Rotation	8	22	19.7 (0.5)	1:12	77	11.2 (317)	ø3.3 X 2.7 (ø83.2 X 67.7)	DA10	○	○	○	○			
266D	SP AF20-40mm F/2.7-7.3.5 ASPHERICAL [IF]	12-15	94°-57°	Rotation	6	22	19.7 (0.5)	1:10.2	77	18.5 (525)	ø3.2 X 3.2 (ø81.5 X 81)	1C0FH	○	○	○	○			
190D	SP AF24-135mm F/3.5-5.6 AD ASPHERICAL [IF] MACRO	10-14	84°-18°	Rotation	7	22	15.7 (0.4)	1:3.3	72	18.7 (530)	ø3.1 X 3.2 (ø78.5 X 80.6)	D6FH	○	○	○	○			
A09	SP AF28-75mm F/2.8 XR Di LD ASPHERICAL [IF] MACRO	14-16	75°-32°	Rotation	7	32	13.0 (0.33)	1:3.9	67	18.0 (510)	ø2.9 X 3.6 (ø73 X 92)	DA09	○	○	○	○	Do not attach 2X tele-converters		
177D 277D	AF28-80mm F/3.5-5.6 ASPHERICAL	7-7	75°-30°	Rotation	6	22	27.5 (0.7)	1:8	58	8.1 (230)	ø2.8 X 2.8 (ø71.5 X 70.4)	1C2FH 2C2FH*	○	○	○	○	Model 277D: Silver version		
276D	SP AF28-105mm F/2.8 LD ASPHERICAL [IF]	13-15	75°-23°	Rotation	9	22	19.7 (0.5) 29.10mm 17.3 (0.44) 20-80mm	1:4.7	82	31.0 (880)	ø3.4 X 4.4 (ø87 X 112)	1C4FH	○	○	○	○	Do not attach tele-converters		
179D	AF28-105mm F4-5.6 [IF]	12-15	75°-23°	Rotation	6	22	19.7 (0.5)	1:5.6	62	10.9 (310)	ø2.8 X 2.9 (ø71 X 73)	1D3FH	○	○	○	○			
A03 A03S	AF28-200mm Super Zoom F/3.8-5.6 ASPHERICAL XR [IF] MACRO	14-15	75°-12°	Rotation	7	22	19.3 (0.49)	1:4	62	12.5 (354)	ø2.8 X 3.0 (ø71 X 75.2)	AD03 AD03S*	○	○	○	○	Model A03S: Silver version		
A061	AF28-300mm F/3.5-6.3 XR Di LD Aspherical [IF] MACRO NEW	13-15	75°-8°	Rotation	9	22	19.3 (0.49)	1:2.9	62	14.8 (420)	ø2.9 X 3.3 (ø73 X 83.7)	AD06	○	○	○	○			
572D 772D	AF70-300mm F/4-5.6 LD MACRO 1:2	9-13	34°-8°	Rotation	9	32	59.0 (1.5) 37.4 (0.95) MACRO	1:2 MACRO	62	15.3 (435)	ø3.0 X 4.6 (ø76.6 X 116.5)	2B4FH 3B4FH*	○	○	○	○	Model 772D: Silver version		
672D	AF75-300mm F/4-5.6 LD MACRO (1:3.9)	9-13	32°-8°	Rotation	9	32	59.0 (1.5)	1:3.9	62	15.3 (435)	ø3.0 X 4.7 (ø76.6 X 118.7)	2B4FH	○	○	○	○			
278D	AF80-210mm F/4.5-5.6	8-9	30°-12°	Rotation	7	22	59.0 (1.5)	1:5.8	52	9.9 (281)	ø2.7 X 3.8 (ø69 X 97.5)	1C6FH	○	○	○	○			
A08	SP AF200-500mm F/5-6.3 Di LD [IF] NEW	10-13	12°-5°	Rotation	9	32	98.4 (2.5)	1:5.0	86	43.2 (1,226)	ø3.7 X 8.8 (ø93.5 X 224.5)	DA08	○	○	○	○	Detachable tripod mount Filter Effect Control		
69E	SP AF14mm F/2.8 ASPHERICAL [IF]	12-14	114°	—	5	22	7.9 (0.2)	1:6.5	—	23.8 (675)	ø3.4 X 3.4 (ø87 X 86.5)	—	○	○	○	○			
272E	SP AF90mm F/2.8 Di MACRO1:1 NEW	9-10	27°	—	9	32	11.4 (0.29)	1:1	55	14.3 (405)	ø2.8 X 3.8 (ø71.5 X 97)	2C9FH	○	○	○	○	With tele-converters, use the manual focus		
B01	SP AF180mm F/3.5 Di LD [IF] MACRO1:1	11-14	14°	—	7	32	18.5 (0.47)	1:1	72	32.5 (920)	ø3.3 X 6.5 (ø84.8 X 165.7)	DB01	○	○	○	○	Detachable tripod mount Filter Effect Control		
360E	SP AF300mm F/2.8 LD [IF] For Canon AF	7-10	8°	—	9	32	98.4 (2.5)	1:7.1	43 (front 112)	98.8 (2,800)	ø4.7 X 8.5 (ø120 X 214.9)	B3FH	○	○	○	○	Tripod mount, rear normal filter and C-PL rear filter		
	79.4 (2,250)									ø4.7 X 8.4 (ø120 X 212.5)	B3FH	○	○	○	○	Hold grip and rear normal filter			
020 series	AF1.4X Tele-Converter	4-4	1/1.4 the angle of view of original lens	—	—	Original lens X1.4	Retains the min. focus of original lens	1.4x the mag. Ratio of original lens	—	4.0 (114)	ø2.6 X 0.7 (ø66.5 X 18.8)	—	○	○	○	○			
140F PRO series	SP AF1.4X Tele-Converter PRO	4-5		4.7 (133)	ø2.7 X 0.8 (ø68 X 19.4)	—	○	○	○	○									
F system 122/220 series	AF2X Tele-Converter	4-4	1/2 the angle of view of original lens	—	—	Original lens X2	Retains the min. focus of original lens	2x the mag. Ratio of original lens	—	4.3 (121)	ø2.6 X 1.0 (ø66.5 X 26)	—	○	○	○	○	Not available in U.S.		
F system 123/230 series	AF2X Tele-Converter	5-7		6.0 (170)	ø2.6 X 1.4 (ø66.7 X 35.7)	—	○	○	○	○									
300F PRO series	SP AF2X Tele-Converter PRO	4-7		6.9 (195)	ø2.7 X 1.7 (ø68.8 X 43.5)	—	○	○	○	○									

*Weight, Diameter x Length Data = Nikon mount *The mark, ○ stands for a flower-shaped hood *The mark, * in the lens hood section stands for hood numbers for silver models. *To attach a lens that maximum aperture is F/3.5 or slower to the teleconverters is not recommended.

MF Lenses

Model	Lenses	Lens Construction (Groups/Elements)	Angle of View	Type of Zooming	Diaphragm Blade Number	Minimum Aperture (F)	Minimum Focus in.(m)	Macro Mag. Ratio	Filter Diameter (ømm)	Weight oz.(gm)	Diameter x Length in.(mm)	Accessory Lens Hood	Case	Remarks	Mount
159A	28-70mm F/3.5-4.5	8-9	75°-34°	Rotation	6	22	27.5 (0.7) 13.4 (0.34) MACRO	1:4	52	9.0 (254)	ø2.5 X 2.5 (ø64.5 X 62.5)	59FH	○		
176A	SP28-105mm F/2.8 LD ASPHERICAL [IF]	13-15	75°-23°	Rotation	9	22	19.7 (0.5) 29.10mm 17.3 (0.44) 20-80mm	1:4.7	82	31.9 (905)	ø3.3 X 4.4 (ø84 X 112)	C4FH	○		
171A	28-200mm F/3.8-5.6 LD ASPHERICAL [IF] Super	14-16	75°-12°	Rotation	6	22	31.5 (0.8)	1:6.3	72	17.9 (508)	ø2.9 X 3.1 (ø74.5 X 79)	D5FH	○		
19AH	SP70-210mm F/3.5	11-15	34°-12°	Push-pull	7	32	33.5 (0.85)	1:2.6	62	32.5 (920)	ø2.8 X 6.1 (ø71 X 154.5)	49FH	○	Accepts 01F converters	
158A	70-210mm F/4-5.6	9-13	34°-12°	Push-pull	8	32	43.3 (1.1)	1:4	52	12.5 (353)	ø2.6 X 3.1 (ø67 X 79)	58FH	○		Adaptall II Interchangeable Mount system
23A	SP60-300mm F/3.8-5.4	11-15	40°-8°	Push-pull	8	32	74.8 (1.9) 13.4 (0.34) MACRO	1:1.5	62	32.8 (930)	ø2.7 X 6.5 (ø68 X 166)	48FH	○	Accepts 01F converters	
01BB	24mm F/2.5	9-10	84°	—	5	22	9.8 (0.25)	1:7	55	10.1 (287)	ø2.7 X 1.7 (ø68 X 43)	—	○		
72B	SP90mm F/2.8 MACRO 1:1	9-10	27°	—	9	32	11.4 (0.29)	1:1	55	15.0 (426)	ø2.7 X 4.0 (ø68.2 X 101.5)	C9FH	○	Accepts 01F converters	
360B	SP300mm F/2.8 LD [IF]	7-10	8°	—	9	32	98.4 (2.5)	1:7.1	43 (front 112)	80.0 (2,269)	ø4.7 X 8.4 (ø120 X 212.5)	B3FH	○	Hold grip and rear normal filter	
55BB	SP500mm F/8	4-7	5°	—	—	8 (fixed)	66.9 (1.7)	1:3	30.5 (front 82)	21.0 (595)	ø3.3 X 3.6 (ø84 X 91.5)	28FH	○	Accepts 01F converters. Additional 30.5mm rear and 82mm front filter available as optional extras	
F system 220 series	2X Tele-Converters (Fixed mount system)	4-4	1/2 the angle of view of original lens	—	—	Original lens X2	Retains the min. focus of original lens	2x the mag. ratio of original lens	—	4.3 (121)	ø2.6 X 1.0 (ø65.7 X 26)	—	○	For Pentax K, Nikon AI, Canon FD, Minolta MD, Olympus OM, Konica AR, Contax / Yashica	

*Weight, Diameter x Length Data = Nikon mount *The mark, ○ stands for a flower-shaped hood *Specifications and availability are subject to change without notice

Caution : Please read the instruction manual carefully before using the lens.

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