LENS TECHNOLOGY

Sigma lens technology enables the photographer to express his own sensitivity through images.
Sigma has refined optical technology, in order to fully realize the possibilities of single lens reflex cameras and to respond exactly to the demands of the photographer, helping him to bring his visions to reality.

**Hyper-Sonic Motor (HSM):**
This lens uses a motor driven by ultrasonic waves to provide a quiet, high-speed AF.

**Rear Focus:**
This lens is equipped with a system that moves the rear lens group for high-speed, silent focusing.

**Inner Focus:**
To ensure stability in focusing, this lens moves the inner lens group or groups without changing the lens' physical length.

**Conv. (APO Teleconverter EX):**
This lens can be used with the APO Teleconverter EX. It can increase the focal length and will interface with the camera's AE (automatic exposure) function.

**EX Lens:**
The excellent features of these Sigma lenses, such as new optical and mechanical design concept, superior performance, perfect handling, ultra compact design, durability etc., are symbolized by the EX mark.

**Aspherical Lens:**
The aspherical lens complex allows freedom of design, improved performance, a reduced number of component lenses and a compact size.

**APO Lens:**
In order to attain the highest quality images, the APO lens has been made using Special Low-Dispersion (SLD) glass and is designed to minimize color aberration.

**Optical Stabilizer (OS):**
This function utilizes a built-in mechanism that compensates for camera shake. It dramatically expands photographic possibilities by alleviating camera movement when shooting hand held.

**SIGMA Advanced Lens Technology.**

**EX Lens:**
The most suitable lenses for DSLR cameras, as well as for digital SLR cameras. Sigma's development of the EX range of lenses has concentrated on the correction of distortion and aberrations. Magnification of chromatic aberration is particularly conspicuous with digital cameras. The optical design and cutting-edge technology incorporated by Sigma eliminate flare and ghosting from the image sensor and create excellent color balance. Vignetting is minimized whilst marginal illumination is ensured. These high performance lenses are equally suited for digital and analogue cameras.

**DG (Digital) Lenses:**
The DG (Digital) range of lenses is designed to be used with Digital Single-Lens Reflex (DSLR) cameras. Sigma's development of the DG (Digital) range of lenses has concentrated on the correction of distortion and aberrations. Magnification of chromatic aberration is particularly conspicuous with digital cameras. The optical design and cutting-edge technology incorporated by Sigma eliminate flare and ghosting from the image sensor and create excellent color balance. Vignetting is minimized whilst marginal illumination is ensured. These high performance lenses are equally suited for digital and analogue cameras.

**DC (Digital Camera) Lenses:**
For these special digital single-lens reflex camera lenses, the image circle has been designed to match the image elements which correspond to the APS-C size. The original technology gathered during the development of the 3D series of digital single-lens reflex camera has been used to realize optical abilities most suitable for digital images. This high-performance lens series combines the technologies and know-how for lens power arrangement, coating design, etc., accumulated during long years of developing interchangeable lenses for single-lens reflex cameras, with up-to-date digital image technology. Reduction of the image circle diameter makes it possible to reduce the size and the weight of the lens, and contributes widely to the handling characteristics at the time of taking pictures.

* Use is not possible for digital single-lens reflex cameras with image elements larger than the APS-C equivalent size, 35 mm single-lens reflex cameras, and APS film single-lens reflex cameras. In case of such use, vignetting occurs on the screen and in the resulting images.

**DG (Digital) Lenses:**
The most suitable lenses for 35 mm film single-lens reflex camera, as well as for digital SLR cameras. Sigma's development of the DG (Digital) range of lenses has concentrated on the correction of distortion and aberrations. Magnification of chromatic aberration is particularly conspicuous with digital cameras. The optical design and cutting-edge technology incorporated by Sigma eliminate flare and ghosting from the image sensor and create excellent color balance. Vignetting is minimized whilst marginal illumination is ensured. These high performance lenses are equally suited for digital and analogue cameras.

**Inner Focus:**
To ensure stability in focusing, this lens moves the inner lens group or groups without changing the lens' physical length.

**Rear Focus:**
This lens is equipped with a system that moves the rear lens group for high-speed, silent focusing.

**Hyper-Sonic Motor (HSM):**
This lens uses a motor driven by ultrasonic waves to provide a quiet, high-speed AF.

**DC (Digital Camera) Lenses:**
For these special digital single-lens reflex camera lenses, the image circle has been designed to match the image elements which correspond to the APS-C size. The original technology gathered during the development of the 3D series of digital single-lens reflex camera has been used to realize optical abilities most suitable for digital images. This high-performance lens series combines the technologies and know-how for lens power arrangement, coating design, etc., accumulated during long years of developing interchangeable lenses for single-lens reflex cameras, with up-to-date digital image technology. Reduction of the image circle diameter makes it possible to reduce the size and the weight of the lens, and contributes widely to the handling characteristics at the time of taking pictures.

* Use is not possible for digital single-lens reflex cameras with image elements larger than the APS-C equivalent size, 35 mm single-lens reflex cameras, and APS film single-lens reflex cameras. In case of such use, vignetting occurs on the screen and in the resulting images.

**DG (Digital) Lenses:**
The most suitable lenses for 35 mm film single-lens reflex camera, as well as for digital SLR cameras. Sigma's development of the DG (Digital) range of lenses has concentrated on the correction of distortion and aberrations. Magnification of chromatic aberration is particularly conspicuous with digital cameras. The optical design and cutting-edge technology incorporated by Sigma eliminate flare and ghosting from the image sensor and create excellent color balance. Vignetting is minimized whilst marginal illumination is ensured. These high performance lenses are equally suited for digital and analogue cameras.

**Inner Focus:**
To ensure stability in focusing, this lens moves the inner lens group or groups without changing the lens' physical length.

**Rear Focus:**
This lens is equipped with a system that moves the rear lens group for high-speed, silent focusing.

**Hyper-Sonic Motor (HSM):**
This lens uses a motor driven by ultrasonic waves to provide a quiet, high-speed AF.

**DC (Digital Camera) Lenses:**
For these special digital single-lens reflex camera lenses, the image circle has been designed to match the image elements which correspond to the APS-C size. The original technology gathered during the development of the 3D series of digital single-lens reflex camera has been used to realize optical abilities most suitable for digital images. This high-performance lens series combines the technologies and know-how for lens power arrangement, coating design, etc., accumulated during long years of developing interchangeable lenses for single-lens reflex cameras, with up-to-date digital image technology. Reduction of the image circle diameter makes it possible to reduce the size and the weight of the lens, and contributes widely to the handling characteristics at the time of taking pictures.

* Use is not possible for digital single-lens reflex cameras with image elements larger than the APS-C equivalent size, 35 mm single-lens reflex cameras, and APS film single-lens reflex cameras. In case of such use, vignetting occurs on the screen and in the resulting images.

**DG (Digital) Lenses:**
The most suitable lenses for 35 mm film single-lens reflex camera, as well as for digital SLR cameras. Sigma's development of the DG (Digital) range of lenses has concentrated on the correction of distortion and aberrations. Magnification of chromatic aberration is particularly conspicuous with digital cameras. The optical design and cutting-edge technology incorporated by Sigma eliminate flare and ghosting from the image sensor and create excellent color balance. Vignetting is minimized whilst marginal illumination is ensured. These high performance lenses are equally suited for digital and analogue cameras.

**Inner Focus:**
To ensure stability in focusing, this lens moves the inner lens group or groups without changing the lens' physical length.

**Rear Focus:**
This lens is equipped with a system that moves the rear lens group for high-speed, silent focusing.

**Hyper-Sonic Motor (HSM):**
This lens uses a motor driven by ultrasonic waves to provide a quiet, high-speed AF.
**DC LENS FOR DIGITAL SLR CAMERA**

Pursuing the pleasure of photography in a technological age. Lenses especially designed and optimized to complement the characteristics of digital cameras. Reducing the size of the image circle improves the image quality of digital SLRs and makes a lightweight and compact construction possible.

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**4.5-50 mm F4-6.3 DC WR**

- **Lens Construction:** 10 Groups, 14 Elements
- **Minimum Focusing Distance:** 100 cm (3.9 inches)
- **Magnification:** 1:5.3
- **Filter Size:** ø 67 mm

This is a large-aperture standard zoom lens for digital cameras, that provides wide angle and telephoto capabilities. This lens has a minimum focusing distance of 100 cm (3.9 inches) throughout the zoom range, and a maximum reproduction ratio of 1:5.3. It covers the most frequently used focal lengths, and it makes an F4.5 open aperture (at 4.5 mm setting) a reality. Because of its power distribution and optimized coatings, this lens reduces flare and ghost images. The use of SLD (Special Low Dispersion) glass and aspherical lenses was adopted to provide excellent correction for all types of aberration. *The angles of view will vary, depending on which camera model the lens is used with.*

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**18-200 mm F3.5-6.3 DC**

Lenses especially designed and optimized to complement the characteristics of digital cameras. Reducing the size of the image circle improves the image quality of digital SLRs and makes a lightweight and compact construction possible.

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**10-20 mm F4-5.6 EX DC HSM**

- **Lens Construction:** 10 Groups, 14 Elements
- **Minimum Focusing Distance:** 24 cm (9.4 inches)
- **Magnification:** 1:6.7
- **Filter Size:** ø 77 mm

This is an ultra-wide zoom lens for digital SLR camera use only. SLD glass is used for superior correction of magnification and chromatic aberrations. And, aspherical lens elements are used not only to obtain maximum correction for distortion and various aberrations, but also to display high image quality throughout the entire zoom range. Equipped with HSM, this lens makes fast AF speeds and quiet shooting a reality, and it is also capable of full-time manual focus. The lens has a minimum focusing distance of 24 cm (9.4 inches) throughout the entire zoom range.

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**17-70 mm F2.8-4.5 DC MACRO**

- **Lens Construction:** 12 Groups, 15 Elements
- **Minimum Focusing Distance:** 20 cm (7.9 inches)
- **Magnification:** 1:2.3
- **Filter Size:** ø 72 mm

This is a large-aperture standard zoom lens for digital cameras, that provides wide angle and telephoto capabilities. This lens has a minimum focusing distance of 20 cm (7.9 inches) throughout the zoom range, and a maximum reproduction ratio of 1:2.3. It covers the most frequently used focal lengths, and it makes an F2.8 open aperture (at 17 mm setting) a reality. Because of its power distribution and optimized coatings, this lens reduces flare and ghost images. The use of SLD (Special Low Dispersion) glass and aspherical lenses was adopted to provide excellent correction for all types of aberration. *The angles of view will vary, depending on which camera model the lens is used with.*
This is a special digital 6.9 times high-performance zoom lens covering the entire range from wide angle to tele by a single lens. The use of SLD (Special Low Dispersion) glass and aspheric lenses offers good correction of the various aberrations and realization of high-quality images over the zoom range, as well as allowing a compact and lightweight construction. The minimum focusing distance is 50 cm (19.7 inches), over the zoom range, and a maximum close-up photography magnification of 1.5 is obtained.

* The angles of view will vary depending on which camera model the lens is used with.

It is compact and lightweight, with a weight of 780 g (27.5 oz.), a maximum diameter of 76.3 mm (3 inches), and a length of 132.6 mm (5.2 inches) for Nikon. The latest optical technologies are condensed into this lens for the utmost correction of various aberrations and the minimum occurrence of flare and ghosting. The lens has a minimum focusing distance of 45 cm (17.7 inches). The HSM-equipped model makes fast AF speeds and quiet shooting a reality, and it also has full-time manual focus override. The lens also accepts designated Tele Converters, available as an optional accessory.

* The angles of view will vary depending on which camera model the lens is used with.

This zoom lens was specially designed to suit the characteristics of digital cameras. The image circle was designed to match the size of the image sensors of most digital SLR cameras, and this has resulted in a compact, lightweight lens. The use of aspheric lenses provides correction for various aberrations and makes high-quality images a reality throughout the entire zoom range. The lens has a minimum focusing distance of 25 cm (9.8 inches) at all focal lengths and is capable of macro photography with a maximum close-up photography magnification of 1:3.5.

* The angles of view will vary depending on which camera model the lens is used with.

This is a large-aperture standard lens for digital SLR cameras, with a fast F1.4 aperture. SLD (Special Low Dispersion) and ELD (Extraordinary Low Dispersion) glass elements are used to obtain the best possible correction for magnification and chromatic aberrations, which are particular problems for digital cameras. The aspherical lens element delivers superior image quality, with sharp, vivid images across the entire focusing range. Equipped with HSM, this lens makes fast AF speeds and quiet shooting a reality, and it is also capable of full-time manual focus.

* The angles of view will vary depending on which camera model the lens is used with.
This award winning, ultra-wide zoom lens starting from 12 mm is ideal for 35 mm, as well as, digital SLR cameras. With an incredible angle of view of 122°, this lens opens up a brand-new world of photography. The HSM equipped model makes fast AF speeds and quiet shooting a reality. It also benefits from full-time manual focus. With four SLD (Special Low Dispersion) glass elements and three aspherical lenses, including two molded glass aspheric elements this lens provides the utmost correction of chromatic and other aberrations, and at the same time delivers superior image quality.

12-24 mm F4.5-5.6 EX DG ASPHERICAL HSM

This is an ultra-wide zoom lens that covers a large wide-angle range from 15 mm to 30 mm. With a minimum focusing distance of 30 cm (11.8 inches) throughout the entire zoom range, it is an ideal lens for Digital SLR Cameras. With aspherical lenses in the front and rear lens groups, this lens has excellent correction for distortion — a particular problem for zoom lenses — and for all types of aberration, and it displays a high level of optical performance. The lens is equipped with an integral Petal-type hood to block out extraneous light.

15-30 mm F3.5-4.5 EX DG ASPHERICAL

This is a large-aperture wide-angle zoom lens that cover an ultra-wide angle of view of 104°. With this lens, Sigma has achieved a minimum focusing distance of 27 cm (10.6 inches) at all focal lengths and a maximum magnification of 1:4.5. The HSM-equipped model makes fast AF speeds and quiet shooting a reality, and it also features full-time manual focus. With one SLD (Special Low Dispersion) glass element and two aspherical lenses, this lens provides excellent correction for distortion as well as all types of aberration.

17-35 mm F2.8-4 EX DG ASPHERICAL HSM

This is a large-aperture wide zoom lens that covers focal lengths from an ultra-wide angle range of 20 mm to a near standard lens focal length of 40 mm, with a bright maximum aperture of F2.8 throughout the entire zoom range. The lens has a minimum focusing distance of 30 cm (11.8 inches) at all focal lengths and a maximum magnification of 1:4.6. It is the ideal lens for Digital SLR Cameras. With spherical lenses in the front and rear lens groups, the lens has excellent correction for distortion, as well as all types of aberration, and it displays a high level of optical performance.

20-40 mm F2.8 EX DG ASPHERICAL
This 20 mm super-wide-angle lens offers an angle of view of 94.5° and a large aperture of F1.8. It allows close-ups with a minimum focusing distance of less than 20 cm (7.9 inches). With minimal vignetting, superior peripheral brightness is ensured. Aspherical lens elements are used to compensate for distortion and aberrations. The focus mechanism employs a linear-motion focus system with a non-rotating front barrel and an easy-to-use "Petal-type hood" is provided as a standard accessory.

WIDE LENS

A wide angle of view and a short shooting distance produce pictures filled with individuality. Bold composition, extreme perspective and personal expression are indicative of these wide angle lenses.
A compact large-aperture zoom lens optimized for digital cameras. The maximum aperture F-value is 2.8 over the entire zoom range. The minimum focusing distance is 38 cm (15 inches), throughout the zoom range. Effective arrangement of SLD (Special Low Dispersion) glass provides good correction for the magnification chromatic aberration, which can become a problem especially for digital cameras. As the front barrel of the lens does not rotate at the time of focusing, attachment of a custom petal-type hood, excellent for blocking out extraneous light, is possible, and circular polarizing filters also can be used easily.

24-60 mm F2.8 EX DG

- Lens Construction: 13 Groups, 14 Elements
- Minimum Focusing Distance: 38 cm (15.0 in.)
- Magnification: 1:3.8
- Filter Size: ø 77 mm

24-70 mm F2.8 EX DG MACRO

- Lens Construction: 15 Groups, 16 Elements
- Minimum Focusing Distance: 38 cm (15.0 in.)
- Magnification: 1:5.8
- Filter Size: ø 77 mm

28-300 mm F3.5-6.3 DG MACRO

- Lens Construction: 10 Groups, 14 Elements
- Minimum Focusing Distance: 40 cm (15.7 in.)
- Magnification: 1:3.8
- Filter Size: ø 82 mm

STANDARD ZOOM LENS

A standard zoom lens is a useful first lens. The effects of a number of lenses can be obtained with this single lens. Wideangle, standard and telephoto focal lengths are all combined in one lens to produce a convenient and versatile zoom, which caters for the photographer’s creativity.
A compact large-aperture zoom lens optimized for digital cameras. The maximum aperture F-number is 2.8 over the zoom range. Two SLD (Special Low Dispersion) glass elements and four aspherical lenses provide excellent correction for distortion as well as all types of aberration. The minimum focusing distance is 33 cm (13 inches) over the zoom range and a maximum close-up photography magnification of 1:4.4. As the front barrel of the lens does not rotate during the focusing, an attachment of a petal-type hood for blocking out extraneous light is possible, and circular polarizing filters can also be used easily.

This standard zoom lens is ideal for Digital SLR cameras, and has an F2.8 large aperture (at the 28 mm setting), and yet it is compact and lightweight, with an overall length of 62.5 mm (2.5 inches) and weight of 255 g (9 oz.). This lens comes into its own when active people need a lens that can keep up with them. The new multi layer coating of this lens cuts down flare and ghosting. A perfect solution for film and digital SLR cameras. The minimum focusing distance is 50 cm (19.7 inches) throughout the entire zoom range. Aspherical lens elements are used for excellent correction of distortion.

Compact High Performance Zoom Lens with a large 10.7:1 Zoom Ratio, optimized for digital SLR cameras. The new lens coating reduces flare and ghosting. This zoom lens features a high zoom ratio and optimized for digital SLR cameras. Covering from 28 mm wide angle to 200 mm telephoto, this lens has the most frequently used focal range. It also has a minimum focusing distance of 48 cm (18.9 inches) at all zoom settings, so taking close-ups is no problem. With two aspherical lenses, it has excellent correction for all types of aberration, and displays a high level of optical ability.

In the drawing of the lens composition, the symbols mean the following: Aspherical lens, SLD glass, ELD glass.

* Product pictures show Sigma SA mount lenses; appearance of the product may be different depending on the mount type.
TELEPHOTO ZOOM LENS

Telephoto zoom lenses can manipulate the apparent distance from the subject. This control of perspective can produce presence and impact. Dramatic images of wildlife and sporting activity are only made possible by the use of these specialist lenses.

This lens covers focal lengths from the standard-to-super telephoto range that's ideal for film and digital cameras. SLD (Special Low Dispersion) glass is used for superior correction of chromatic aberration. The HSM-equipped models provide quiet and high-speed AF, as well as full-time manual focusing. And by adding an APO 1.4X Tele Converter, you can use this lens as a 140-700 mm F7.2-8.8 MF lens, or with a 2X Tele Converter, as a 210-1000 mm F10-14 MF lens. (With a Tele Converter mounted on the lens, the zoom control can be set between 100 mm and 500 mm.)

This telephoto zoom lens effectively optimized for use with digital and 35 mm SLR cameras. This lens has two SLD (Special Low Dispersion) glass elements in the front lens group and one in the rear lens group for correction of chromatic aberration throughout the entire zoom range. It is capable of macro photography with a 1.2 maximum close-up magnification at the 300 mm focal length. It also has a switch for changeover to macro photography at focal lengths between 200 mm and 300 mm.

This is a large-aperture telephoto zoom lens for digital cameras, that has a minimum focusing distance of 100 cm (39.4 inches) and maximum reproduction ratio of 1:3.5. It is designed to unleash the power of close-up photography. With super multi-layer lens coatings, it reduces the occurrence of flare and ghosting. SLD and ELD glass is used for superior correction of chromatic aberration and for high picture quality throughout the entire zoom range. The HSM makes fast AF speeds and quiet shooting a reality, and its total length does not change during focusing or zooming. The minimum focusing distance can be extended by optional 1.4X or 2X APO Teleconverters.

This is a large-aperture telephoto zoom lens for digital cameras, that has a minimum focusing distance of 100 cm (39.4 inches) and maximum reproduction ratio of 1:3.5. It is designed to unleash the power of close-up photography. With super multi-layer lens coatings, it reduces the occurrence of flare and ghosting. SLD and ELD glass is used for superior correction of chromatic aberration and for high picture quality throughout the entire zoom range. The HSM makes fast AF speeds and quiet shooting a reality, and its total length does not change during focusing or zooming. The minimum focusing distance can be extended by optional 1.4X or 2X APO Teleconverters.

This telephoto zoom lens effectively optimized for use with digital and 35 mm SLR cameras. This lens has two SLD (Special Low Dispersion) glass elements in the front lens group and one in the rear lens group for correction of chromatic aberration throughout the entire zoom range. It is capable of macro photography with a 1.2 maximum close-up magnification at the 300 mm focal length. It also has a switch for changeover to macro photography at focal lengths between 200 mm and 300 mm.

This is a large-aperture telephoto zoom lens for digital cameras, that has a minimum focusing distance of 100 cm (39.4 inches) and maximum reproduction ratio of 1:3.5. It is designed to unleash the power of close-up photography. With super multi-layer lens coatings, it reduces the occurrence of flare and ghosting. SLD and ELD glass is used for superior correction of chromatic aberration and for high picture quality throughout the entire zoom range. The HSM makes fast AF speeds and quiet shooting a reality, and its total length does not change during focusing or zooming. The minimum focusing distance can be extended by optional 1.4X or 2X APO Teleconverters.

This is a telephoto zoom lens with an F4 aperture throughout the entire zoom range, and with performance features that are perfect for digital and 35 mm SLR cameras. Two SLD (Special Low Dispersion) glass elements are used in the front lens group and two in the rear lens group for superior correction of chromatic aberration. The lens is easy to hold and use, because its length does not change during focusing or zooming. The HSM-equipped model makes fast AF speeds and quiet shooting a reality, and it is also capable of full-time manual focus.
This represents a revolutionary leap forward in ease of use. Ideal for digital and 35 mm SLR cameras, the lens has two Special Low Dispersion (SLD) glass elements in the front lens group for excellent correction of chromatic aberration. And it is equipped with HSM for fast AF speeds and quiet shooting. By adding an optional APO 1.4X Tele-Converter, you can use this lens as a 168-420 mm F4 AF lens, or with a 2X Tele Converter, as a 340-840 mm F5.6 AF lens.

This compact telephoto zoom lens is optimized for Digital SLR cameras. This lens uses one aspherical lens and three SLD (the special low dispersion) glasses for excellent correction of chromatic aberration. High image quality is assured throughout the entire zoom range. Color aberration in the secondary spectrum is compensated by using Special Low Dispersion (SLD) glass. The five group zoom and rear focus systems ensure smooth auto focusing, stability, and ease of use. A removable tripod collar is included as a standard component, as a tripod should be used to prevent unintentional movement.

Ideal for digital as well as 35 mm SLR cameras, this lens has ELD glass elements in the front lens group for sharp, high-contrast images. Its inner focus system makes focusing a snap. The HSM makes fast AF speeds and quiet shooting a reality, and it is also capable of full-time manual focus. The lens takes a rear insertion type filter with its own revolving ring, as well as a circular polarizing filter. And, with the addition of an optional APO Tele Converter, the lens is still capable of high-speed auto focus.

This is designed for digital as well as 35 mm SLR cameras, by continuously varying the angle of view from 8.2° to 3.7°, the lens takes a lot of the footwork out of picture composition. The HSM makes for fast AF speeds and quiet shooting a reality, and it is also capable of full-time manual focus. And, by adding an optional APO 1.4X Tele Converter, you can use this lens as a 420-1120 mm F6.3 MF lens, or with a 2X Tele Converter, as a 840-2240 mm F11 MF lens.

This is a large-aperture 800 mm lens that is ideal for digital as well as 35 mm SLR cameras. ELD glass elements are used in the front lens group to deliver high contrast and high resolution across the entire aperture range. The lens housing accommodates a rear insertion type filter. The HSM makes fast AF speeds and quiet shooting a reality, and it is also capable of full-time manual focus. And, by adding an optional APO 1.4X Tele Converter, you can use this lens as a 1120 mm F5.6 MF lens, with a 2X Tele Converter, as a 2240 mm F11 MF lens.
There is beauty and drama in the minute world right on your doorstep. Macro lenses are indispensable for the close-up photography required to detect and record these magical scenes.
LENS KNOWLEDGE

Knowing your lenses means knowing photography. The basics of lenses and an explanation of the technology used by Sigma to create these top quality instruments.

LENS TECHNOLOGY

• Apo Aspherical

This lens provides high optical performance while maintaining a compact size. For example, the 12-24 mm f/4.5-5.6 EX DG Aspherical lens is suitable for telephoto lenses, and it provides distortion-free images with image reproduction performance equivalent to that of a single-focal-length lens. Aspherical lenses allow the production of high-quality images from compact, lightweight telephoto zoom lenses.

Apo (APO) Lens

SIGMA’s APO zoom lenses minimize color aberration. As the refractive index of glass depends on the wavelength of light, color aberration occurs when different colors form images at different points. This problem often occurs with telephoto lenses, but the Special Low Dispersion (SLD) glass used in SIGMA’s APO lenses helps to control color aberration, thereby allowing them to produce sharp images.

• APO Macro

Although telephoto zoom lenses can be used closer to the object than fixed focal length telephoto lenses, there is still a minimum shooting distance. SIGMA has made this minimum distance smaller and developed the MACRO lens for taking close-up photographs of the same quality as those taken with a regular MACRO lens, while maintaining the performance specific to an APO lens. Rather than carrying around the cumbersome accessories required for close-up work, the photographer can now take photographs at a magnification of 1:2 (one half lifesize) using a telephoto lens, by quickly shifting from the normal setting to the full macro setting.

• Inner and Rear Focus

Conventional focusing has normally been performed by moving either all lens groups as a fixed unit or only the first lens group. AF cameras are now widely used, even for close-up photography. Consequently, demand has arised for a focusing system that will keep the length of the lens unchanged while showing little fluctuation of aberration. In response to this demand, SIGMA has developed a new inner focus system that moves two lens groups inside the telephoto and telephoto MACRO lenses.

This system has floating elements that substantially improve the close-up capability of the lens. The super wide angle lens having a large front-lens uses a rear focusing system to move the rear-lens apparatus and enhance the focusing effect, and the 18-35 mm f/3.5-5.6 DG lens uses an inner focusing system to move the secondary lens apparatus. SIGMA has also succeeded in achieving a minimum shooting distance of 9.7 inches/0.5 m throughout the entire zoom range of this lens. The rear focus system ensures high-speed focusing with the APO 50-135 mm f/4.5-5.6 DG and APO 170-500 mm f/5.6 DG telephoto zoom lenses.

• Floating System

The floating system is used to control the focus. This system moves the different lens groups in the optical system to different positions, thereby minimizing the telescoping distance and the fluctuation of aberration at different shooting distances. This system is particularly effective for macro lenses (which encompass a wide range of shooting distances) and wide-angle lenses (for Single-Lens Reflex cameras) whose lens composition is asymmetric. SIGMA uses the floating system for the MACRO 50 mm f/2.8 EX DG lens and the large-aperture wide-angle lens 28 mm f/1.8 DG Aspherical Macro lens.

• DF (Dual Focus) System

The DF (Dual Focus) system disengages the linkage between the internal focusing mechanism and outer focusing ring when the focusing ring is moved to the AF position. This system provides easy and precise handling of the lens, since the focusing ring does not rotate during autofocus. The wide focusing ring also enables easy and accurate manual focusing.

• OS (Optical Stabilizer) Function

Developed with Sigma’s own technology, the OS (Optical Stabilizer) function uses two sensors inside the lens to detect both vertical and horizontal movement of the camera. This function, which works by moving an optical image stabilizing lens group, to effectively compensate for camera shake, helps to set out lenses apart from the rest. To handle all types of shooting conditions, the system has two optical stabilizer modes. Mode 1 determines camera shake in vertical and horizontal panning and compensates for image blurring. It is therefore effective for taking general photographs or for shooting landscapes and other static subjects. Mode 2 detects vertical camera shake and compensates for the shaking. It is effective for moving the camera to photograph moving subjects such as motor sports.

• Rear Focus

With this focus ring, the photographer can now take photographs at a magnification of 1:2 (one half lifesize) using a telephoto lens, by quickly shifting from the normal setting to the full macro setting. The rear focus system ensures high-speed focusing with the APO 50-135 mm f/4.5-5.6 DG and APO 170-500 mm f/5.6 DG telephoto zoom lenses.

PRINCIPLES OF THE LENS

• Angle of View

The focal length determines the area in which objects can be reproduced on the image sensor surface. The angle of view in the area that the lens can photograph is expressed in degrees. The angle of view indicated in the brochure is the angle relative to the diagonal line of 36 mm x 24 mm and 20.7 mm x 13.8 mm frames. As the focal length becomes larger, the angle becomes smaller and the image larger.

• Value (f-number; f-Stop)

The aperture settings of a lens are called f-numbers or f-stops. An aperture represents a ratio between lens focal length and the effective diameter of the given aperture. Because it is related to focal length, the f-number is also called the relative aperture. The f-number equals the focal length of the lens divided by the entrance pupil of the aperture. Aperture settings are marked so that each position changes the amount of light passing through the lens by a factor of 2: the light is either doubled, or reduced by one half. That is, a high number represents a smaller aperture, one that stops twice as much light as the previous aperture. Conversely, a lower number represents a larger aperture, one that increases light twice as much as the previous number. The speed of a lens is the f-number of its maximum effective diameter — i.e., when the aperture is wide open.

• Depth of Field

When you focus on an object, a certain area in front of and behind the object is also in focus, the depth of field refers to the size of this area that is in focus. The depth of field or the range of focus becomes larger when you step down (decrease the size of the aperture), or smaller when you open up (increase the size of the aperture). The depth of field is smaller at smaller shooting distances even when the aperture size remains unchanged, and is larger at longer shooting distances. The depth of field is also dependent on the focal length of the lens; it is larger for lenses of smaller focal lengths or wider angles, and smaller for lenses of larger focal lengths or telephoto lenses, if aperture and the distance to the camera subject remain the same.

• Perspective

Depending on the focal length of the lens, the background appears close to or further away from the object. This visual effect is called perspective. With a wide-angle lens the background will appear remote, and the distance from the subject to the background will be emphasized; when the focal length of a telephoto lens is large, the background will appear to be closer to the object. To take advantage of this effect, use a wide-angle lens to capture both the background and the object, and a telephoto lens to emphasize only the object.

ANGLE OF VIEW AND FOCAL LENGTH

- 180° - 8 mm
- 122° - 12 mm
- 110.5° - 15 mm
- 103.7° - 17 mm
- 84.1° - 24 mm
- 75.4° - 28 mm
- 63.4° - 35 mm
- 46.8° - 50 mm
- 34.3° - 70 mm
- 23.3° - 105 mm
- 18.2° - 135 mm
- 12.3° - 200 mm
- 8.2° - 300 mm
- 5° - 500 mm
- 3.1° - 800 mm
This line-up enables the photographer to express himself completely.

Sigma lens line-up including Tele Converters & lens accessories.

**DC LENS**
- 10-20 mm F4-5.6 EX DC
- 18-70 mm F2.8-4.5 DCMacro
- 18-200 mm F3.5-6.3 DC Macro
- 16-50 mm F2.8-5.6 DC
- 18-50 mm F3.5-6.3 DC

**ZOOM LENS**
- 15-30 mm F5-6.3 DC Macro
- 17-30 mm F2.8-4.5 DC Macro
- 18-135 mm F3.5-5.6 DC Macro
- 30-105 mm F4-5.6 DC Macro

**SINGLE FOCAL LENGTH LENS**
- 56 mm F1.4 EX DC HSM
- 24-70 mm F2.8 EX DG MACRO
- 70-200 mm F2.8 EX DG MACRO HSM
- 80-200 mm F2.8 EX DG MACRO
- 150-500 mm F5-6.3 EX DG MACRO
- 300 mm F2.8 EX DG MACRO

**TELE CONVERTER**
- APO TELE CONVERTER 1.4x EX DG
- APO TELE CONVERTER 2x EX DG

These are dedicated APO teleconverters that can be mounted between appropriate lenses and the camera body to increase the focal length by the power of 1.4 or 2 and are compatible with digital SLR cameras. They are also compatible with the lens autofocus function, depending on the aperture f value of the lens being used, and they work with the AE (Automatic Exposure) function, dispensing with complicated exposure calculations. They increase maximum photography magnification by 1.4x or 2x, without any variation in the minimum focusing distance. Compact and lightweight, these teleconverters convert your lenses into longer focal-length lenses, so you don’t have to do a lot of unnecessary footwork.

**LENS ACCESSORIES**
- Lens hood
- Petal type lens hood (LH680-01)
- Circular PL Filter
- Tripod Socket (TS-41)

**SIGMA DG Filter**
The new DG filters benefit from super multi-layer lens coatings, developed to combat the highly reflective characteristics of digital image sensors, reducing both flare and ghosting. Black rimmed glass eliminates unnecessary internal reflections. New DG filters deliver high performance on both digital SLR cameras and film SLR cameras.

**TRIPOD SOCKET TS-41**
The Tripod Socket can be used with APO 70-200 mm F2.8 EX DG MACRO HSM, APO 105-300 mm F4 EX DG, APO 120-300 mm F2.8 EX DG HSM, APO 150-500 mm F5-6.3 DG, APO MACRO 150 mm F2.8 EX DG, APO MACRO 180 mm F3.5 EX DG, APO 100 mm F2.8 DG Macro. It is larger than the standard tripod fitting supplied with these lenses providing even more stability. This tripod socket is supplied as a standard accessory with 120-300 mm F2.8 EX DG HSM lens.
### SPECIFICATION

#### The Major Distinguishing Characteristics of SIGMA Digital Lenses

<table>
<thead>
<tr>
<th>Auto Focus</th>
<th>Camera Compatibility</th>
<th>Lens Construction</th>
<th>Angle of view</th>
<th>Number of Blades</th>
<th>Minimum Aperture</th>
<th>Minimum Focusing Distance (cm)</th>
<th>Magnification Factor</th>
<th>Filter Size (mm)</th>
<th>Dimensions</th>
<th>Weight</th>
<th>Hood</th>
</tr>
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<tbody>
<tr>
<td>28-300mm F4-5.6 DC HSM</td>
<td>for Sony/Canon</td>
<td>14 Groups, 34 Elements</td>
<td>82.5° – 10.3°</td>
<td>9</td>
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<td>120</td>
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<tr>
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<td>for Sony/Canon</td>
<td>14 Groups, 26 Elements</td>
<td>70° – 16.6°</td>
<td>9</td>
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<td>0.8</td>
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<td>for Nikon/Canon</td>
<td>11 Groups, 30 Elements</td>
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**Note:**
- The symbol in the field code indicates a D type lens. It means that an HSM lens is also compatible with D type.
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Caution: To ensure the correct and safe use of the product, be sure to read the User’s Manual carefully prior to operation.