Interchangeable Lenses

One of the 35mm SLR user's most powerful tools

Photos and text by Jack & Sue Drafahl

Some of the most powerful tools in the creative imaging process are interchangeable lenses. When properly used, lenses allow photographers to change the angle of view, subject focus, depth of field, exposure, and perspective. Manufacturers understand this and have created a vast selection of interchangeable lenses to satisfy everyone. The problem is discerning which lenses will do the job and are in your price range.

"Normal" lenses, used at "normal" shooting distances, show things pretty much as the eye sees them.

With all the variables in lens design, there isn't a clear-cut answer. Interchangeable lenses come in all shapes, sizes, and prices, depending on the system you use and the type of photography you do. Every photographer has a different style of taking pictures, and what's right for one photographer might not be the correct selection for the next. This makes it imperative that each photographer identify the type of photography they want to do, and then match the lens to the job. For example, a wildlife photographer might use extreme telephoto lenses for distant subjects and a macro lens for close subjects. A photojournalist may require an extreme zoom to reduce equipment bulk, or a very fast lens to work in low light conditions. Portrait photographers would lean towards short telephoto lenses to minimize distortion in their portraits.

To make an educated buying decision, you should first familiarize yourself with the basic construction of a lens, and then the various groups and how they each apply to the types of photography you like to pursue.

Lens Construction

Lenses look pretty simple when you pick them up, but are actually very complex instruments inside. Thanks to all the computer-aided lens design, they are getting more compact, but are marvels of technology. The three main controls on the bulk of the lenses today are aperture, focus and zoom control, if it is a zoom lens.

The back of the lens is where it mounts to the camera. Most lenses today use a bayonet mounting system where you insert the lens into the camera, turn it slightly and the lens locks in place. This is one of the most fragile parts of the lens because this is where you find electronic pin connections, mechanical linkage, and the rear elements. Be sure to use a special rear lens cap to protect it during transport if it is not attached to the camera.

The f-stop ring controls the size of the lens opening, or aperture. As you increase the value of the f-numbers, the aperture inside becomes smaller and less light passes through the lens. A lens that opens to f/1.4 allows more light to enter the lens than one set to f/5.6. These are called fast lenses and usually carry a little higher price tag. Most lenses

today give you the choice of manual or automatic focus control. When used with the auto-everything cameras, they are usually locked in an auto position. Long-focal-length lenses and macros will almost always have a limit switch that restricts the range of focus that the lens must accomplish. Manual focus is usually accomplished by changing the M/A switch to manual focus on the camera. Special lenses such as macro, usually have a special manual/auto button on the side of the lens.

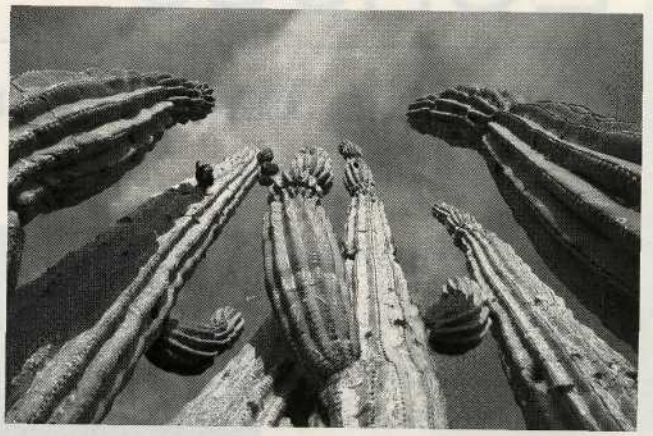
Zoom control is manually adjusted either by rotating a zoom ring or sliding a zoom collar. Zoom lenses often have a variable maximum aperture, like f/3.5–4.5 because the aperture narrows as you zoom. Be sure to look to see how filters attach to the front, what type of lens hood is required, and if a tripod mount is available for the longer focal length lenses.

Normal Lenses

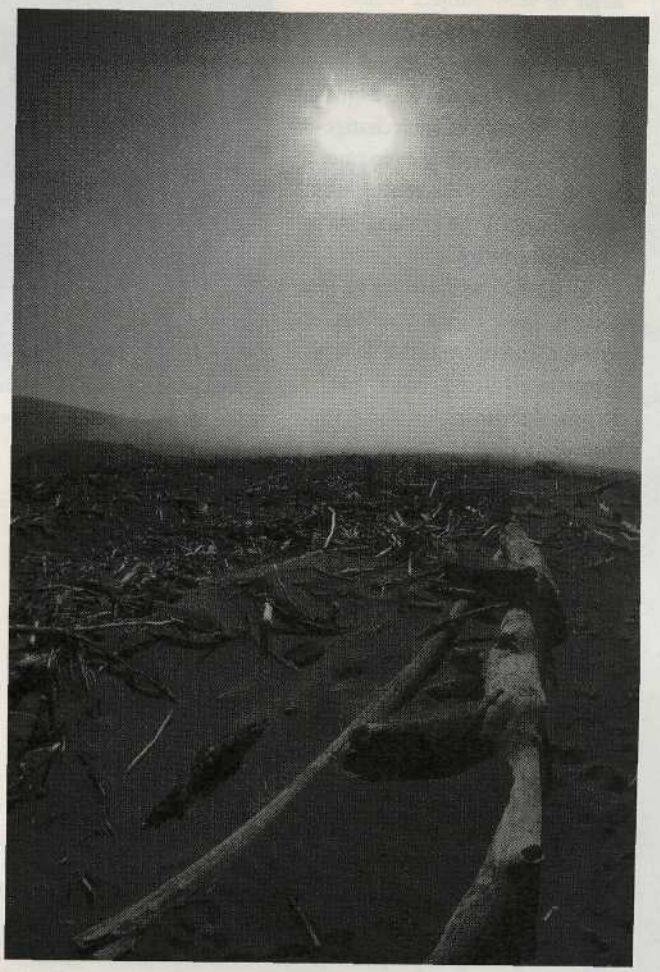
To best understand the difference between each lens group, we need a normal or standard lens from which we can compare all others. The normal lens for 35mm film cameras is usually around 50mm in focal length, as it approximates what the human eye sees. For years, this was the lens you'd see featured with the camera in advertisements, sold as part of a camera starter package, but nowadays, most starter packages include a wide-to-short-telephoto zoom instead of a normal lens. Eventually, most photographers add wider and longer lenses to their camera bags in order to expand their creative skills.

Wide-Angle Lenses

When you want to capture more in the picture than your normal lens will allow, you turn to wide-angle lenses. In addition to allowing you to include more of the scene, a



Above: Another normal-lens shot. If you keep the film plane parallel to the subject plane, vertical lines will remain vertical in the photo. If you tilt the camera up, the vertical lines will converge toward the top; if you tilt it down, they'll converge toward the bottom.



Top: Tilt the camera up, and the film plane is no longer parallel to the subject plane, causing vertical lines converge. Used close distances, wide-angle lenses exaggerate the effect.
Above: Superwide-angle lenses take in a lot of the landscape.

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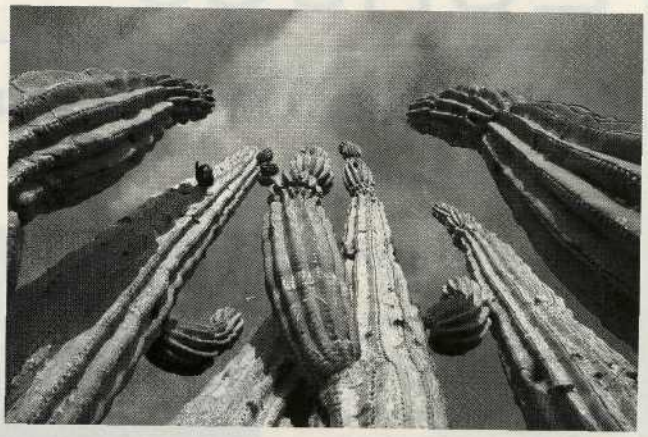

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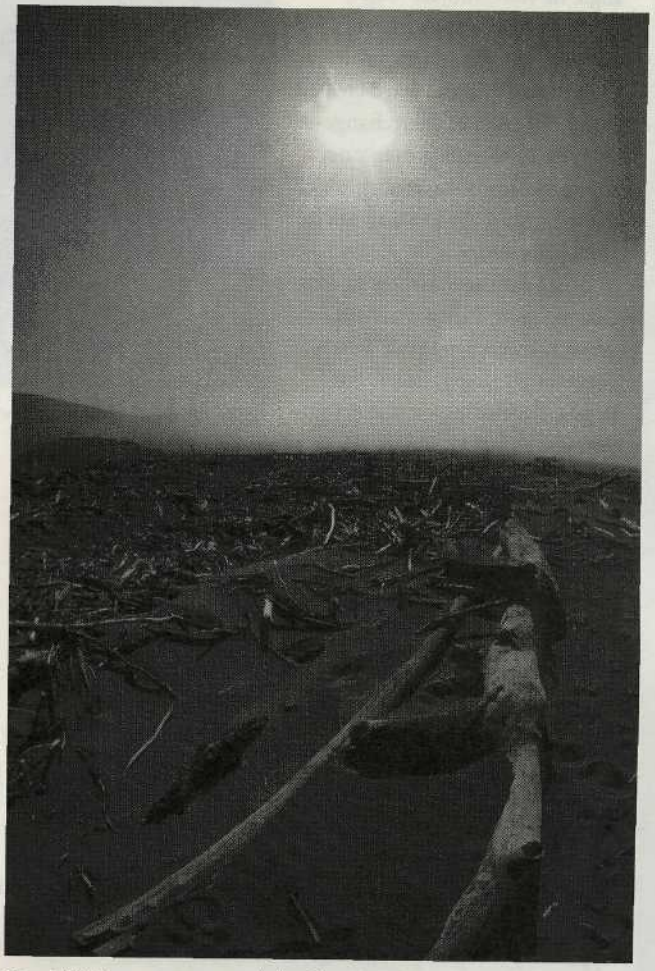

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Above: Superwide-angle lenses take in a lot of the landscape.

Fisheye lenses take in a 180° (or greater) angle of view, and curve straight lines that don't go right through the center of the image. Full-frame fisheyes take in a 180° angle measured diagonally.

wide-angle lens's great angle of view allows you to move in very close to a subject to expand perspective; and wide-angles provide more depth of field (area in focus at a given f-stop). Perspective distortion can provide tremendous depth to the photo and add emotional impact to a normally bland image.

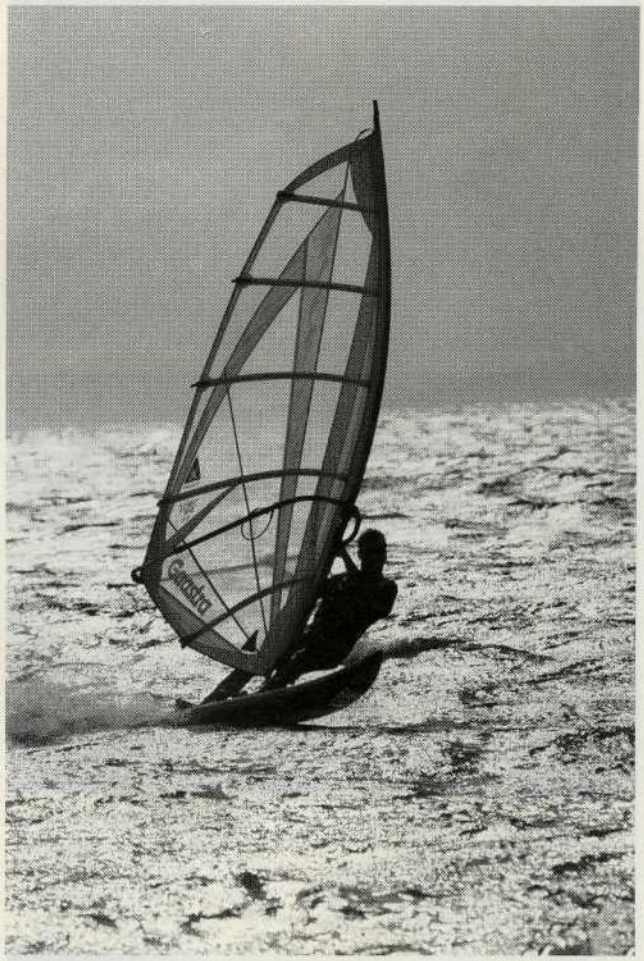
Superwide-angle lenses have enough depth of field to provide sharp focus from a few inches to infinity even without requiring the smallest aperture. Lenses in the 14–20mm range are becoming more common, less expensive, and higher quality thanks to new computer-aided lens design. As the lens gets wider so does the front element, so care must be taken to protect the lens during use and transport. A lens hood is a must in order to avoid flare from the sun. Not to worry though, as most superwide-angles have one built right into the lens itself.

The widest of wide-angle lenses is the fisheye lens. Fisheyes range from 6mm to 16mm, and come in two designs: circular, and full-frame. The circular fisheye covers 180° or more and creates a distorted circular image while the full-frame fisheye takes a rectangular section of the circle and fills the entire 24x36mm frame. If you carefully place the horizon in the center of the frame with a fisheye, it will remain straight, but if you place the horizon above or below center, it will curve (as will any straight lines that don't go through the center of the image).

Telephoto Lenses

Telephoto lenses are designed to bring subjects closer to the camera without you physically having to move. Since wildlife and sports photographers need to capture images of distant action, these are often their lenses of choice. Used at great distances, long telephoto lenses also create the illusion that subjects are closer together than they are in actuality.

The short telephoto, from 75–135mm, is good for portrait images as they produce a good head size at a shooting distance that produces natural perspective. Longer telephoto lenses, from 150mm to 600mm and beyond, are



Supertelephoto lenses crop in on a small portion of the scene, in effect bringing distant subjects to you—especially handy for sports and wildlife photography, when you can't move close to the subject.

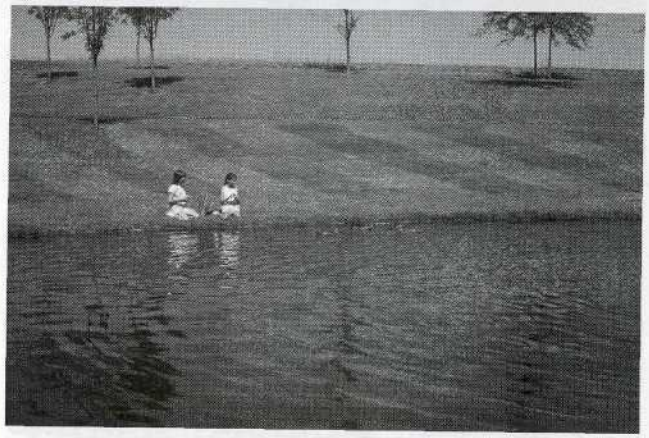
well suited for sports and nature photography. Since they feature a shallow depth of field, you can isolate your subject against a blurred background. Superfast telephotos (with apertures of f/2.8-4) allow you to shoot at higher shutter speeds, giving you more control over action shots. But in your search for lenses, you will quickly find that price and size increase with larger apertures and longer focal lengths.

As your focal length increases, magnification increases the effects of camera shake. You will find it necessary to use a tripod to avoid image blur due to camera movement. Most telephoto lenses have a tripod socket either on the lens itself, or on a collar. A good rule of thumb is that you

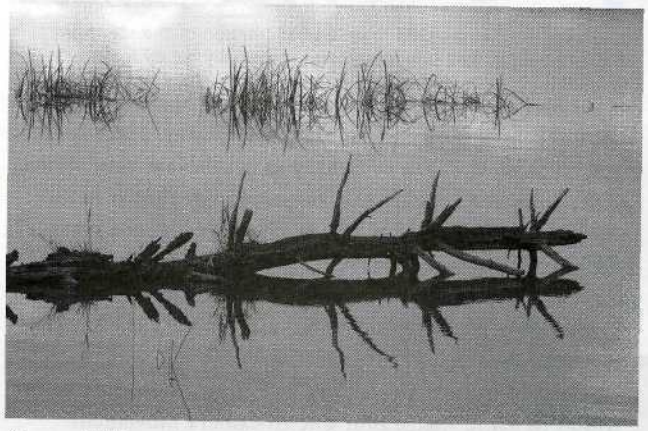
cannot hand-hold a lens when using a shutter speed less than the reciprocal of the focal length of the lens, such as ½50 for a 200mm lens.

Zoom Lenses

These lenses have become increasingly popular because they allow you to change from one focal length to another with a quick twist or slide of a zoom collar. You can easily frame an image and then use the zoom to move into the scene without moving a muscle. Thanks to technological advancements, compact zoom lenses have become some of the most desired lenses in a camera bag. Best of all, one lens takes the place of several, which makes them cost effective.



Top and above: A zoom lens provides a whole range of focal lengths in a single package—handy when you're traveling and short on space, or when you're on a tight budget and can't afford to buy a bunch of lenses. A 28–200mm or 28–300mm zoom covers everything from wide-angle to telephoto, and will handle most shooting needs.



Above: While early zoom lenses left something to be desired in terms of performance, today's major-brand zoom lenses produce excellent image quality, and even pros use high-end zooms.

Focal lengths vary from extreme wide-angle to wide-angle, wide-angle to telephoto, and telephoto to extreme telephoto. You can quickly change focal lengths when shooting pictures with a zoom lens, but zooms are often bigger than prime lenses and have a variable aperture.

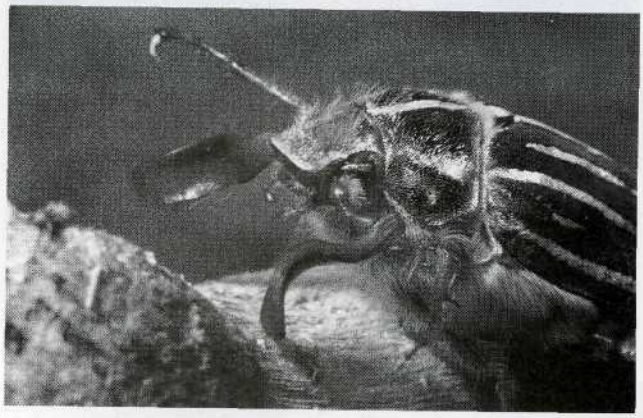
Most of the recent zoom lens offerings will have "macro" capability. This allows you to continue past the normal close focusing range and focus down to a 1:4 macro range.

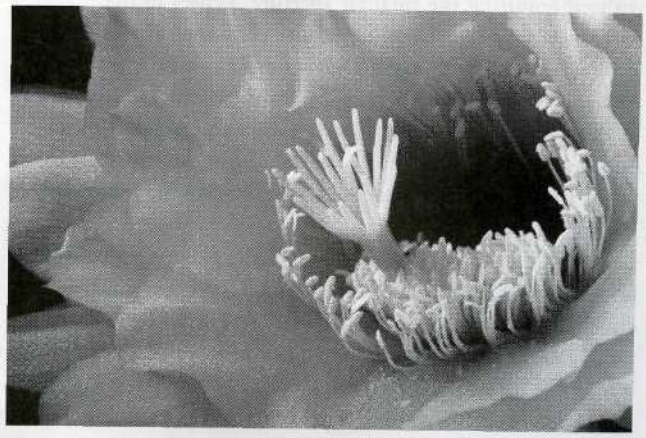
When you decide to purchase a zoom lens, you need to analyze what are the most common focal lengths you use and your most common aperture. Look at the size, features, and cost, remembering that the faster a zoom lens, the bigger and more expensive it will be.

We recommend that first-time zoom buyers select a zoom lens that runs the gamut from wide-angle to telephoto. Lens technologies have generated lenses today that allow focal lengths from 28–200mm or even 28–300mm all in one lens. That extensive coverage gives you the opportunity to try a lot of different focal lengths without having to buy multiple lenses.

Macro Lenses

Macro lenses allow you to make the world of the small bigger than life. If you really enjoy shooting flowers, insects, and other tiny creatures, then the macro lens will soon





Top and above: True macro lenses focus close enough to record 1:1 (life-size) images on the film, and are optimized for such close shooting distances. Macro lenses come in normal (50–60mm), short telephoto (90–105mm) and telephoto (180–200mm) focal lengths; longer focal lengths let you shoot macro shots from farther away.

become your favorite. Normal macro lenses are usually 50–55mm, but recent improvements in lens designs have extended them to 100–200mm in focal length. The advantage of the longer macros is that you can photograph skittish subjects from further away and still accomplish 1:1 life-size reproduction.

Most macro lenses have a wide range of f-stops, down as small as f/32, to maximize depth of field. Unlike most lenses that are sharpest at about two stops down from wide open, macro lenses are designed to be sharpest near the smallest aperture. Even using the smaller apertures, depth of field is very limited at macro shooting distances. It is tough to get everything in focus, so selective focus is often necessary to isolate your subject from the background.

Mirror Lenses

This unique lens incorporates one of the oldest lens designs, dating back to Leonardo DeVinci. It utilizes a concept similar to reflecting telescopes. The internal mirror design allows light to reflect back and forth inside the lens before exiting through the back of the lens.

Their compact size makes mirror lenses great for long hiking expeditions where bulk and weight are considerations. These lenses are generally more economically priced than a standard telephoto lens of the same focal length, but nearly all are manual-focus only, and are generally not quite as sharp. Most have a single aperture setting, so exposure has to be controlled manually by adjusting the shutter speed.

You can easily spot a photo taken with a mirror lens. The unique front mirror design often causes out-of-focus highlights to take the appearance of donut-shaped circles of light.

Perspective-Control Lenses

Architectural photographers working in 35mm use PC lenses to photograph tall buildings and reduce the converging lines at the top. With the perspective-control or shift lens, the photographer simply points the camera lens straight ahead, and shifts the lens up to capture the top of the building, thus keeping all the lines parallel to each other.

Newer types of PC lenses have been introduced that actually tilt and shift the plane of focus so that near and far objects can both be in focus even when using wide apertures. This lens is becoming popular for macro work as it provides more depth of field than possible with a normal lens of the same focal length.

Soft-Focus Lenses

This type of specialty lens is popular with portrait photographers who like to create images featuring a dreamy effect. With this lens the subject remains sharp, but an overlay of soft focus blends into the subject. This helps to keep wrinkles and complexion flaws at a minimum. Some

Mirror lenses "fold" long focal lengths into compact packages by reflecting the light back and forth inside the lens. Mirror lenses also focus closer and cost less than telephotos of equal focal length.

Soft-focus lenses produce soft, glowing images. Some soft-focus lenses produce their effect by combining sharp and unsharp images; other do it by leaving some lens aberrations uncorrected.

of these lenses even offer controls to adjust the degree of image softening.

Tele-Converters

A tele-converter attaches to the back of the lens and has optical elements that increase the focal length of the lens. If you only want to shoot with longer focal lengths occasionally, this is a great alternative. Tele-converters are available in versions that magnify the focal length of your lens anywhere from 1.4X to 3X.

Tele-converters are lightweight, compact and more economical than buying several lenses to do the same job. Bear in mind that they decrease the light transmitted by the lens, by one stop with a 1.4X converter, by two stops with a 2X, etc. So when you add a 2X converter to your 200mm f/2.8 lens, the combo becomes becomes a 400mm f/5.6.

A variation of this extension is called a life-sizer. It works with macro lenses to expand the magnification range to at least twice the reproduction ratio of the original lens. Both accessories are designed for a specific lens or lens system, so make sure to check the compatibility charts before buying one.

Tele-converters fit between the camera body and lens, and increase the lens's focal length. A 2X converter will double the focal length of any lens you attach to it, and retain its minimum focusing distance.

Final Thoughts

Each lens will perform one task better than another, so take the time to analyze the strong points of the lenses you own. This will allow you to select the right lens for the job and help guarantee successful shooting expeditions.

Remember that your lenses are delicate instruments and require careful handling. Their life and efficiency can be increased by keeping them clean and free of dust, smudges and scratches. Be sure that you use front and back lens caps to protect the elements when not in use. When selecting your camera bag, be sure it offers adequate padding for your lenses.

Lenses are available from the camera manufacturers, and from independent lens manufacturers. The following is an alphabetical listing of lens makers to help you with your buying decision. So, let's go shopping!

Canon

Each of Canon's precision crafted EF lens has its own microprocessor-controlled focusing motor for optimum performance. Many lenses also feature Canon's exclusive Ultrasonic Motor, the world's first lens-based motor that assures quick, quiet and precise autofocusing.

Canon EF 16–35mm

Their latest introductions include three new lenses for the EOS system. The new EF 70–200mm f/2.8 IS USM is a fast zoom that provides a versatile telephoto range and incorporates Image Stabilization technology. Their new EF 16–35mm f/2.8 USM zoom lens is Canon's widest-angle zoom lens yet. It is the perfect tool for wide-angle photography and is sure to be a favorite of those using digital SLR cameras (most digital image sensors are smaller than the 24x36mm 35mm film frame, thus decreasing the field of view of any given lens relative to its use on a 35mm film camera).

Canon EF 400mm DO IS

The new EF 400mm f/4 DO IS USM lens features the world's first multi-layer diffractive optical element used in a camera lens. This makes it lighter and more compact, so it is the perfect lens in the field.

In addition, Canon also offers a vast range of focal lengths, from 14mm up to the longest AF lens available, a 1200mm supertelephoto. In-between, there is an array of macro lenses, tilt-shift lenses, fast low-light lenses and zoom lenses to satisfy one and all.

Contax

Contax camera users have the luxury of sporting Carl Zeiss T* lenses, famous for their optimum performance and outstanding color reproduction. Contax has recently introduced three new lenses to complement the Contax N1, N Digital and NX SLR cameras.

The Vario-Sonnar T* 28–80mm f/3.5–5.6 is a compact, lightweight, high-performance zoom that offers the most popular focal-length range used in 35mm photography. It also features a macro function that allows up to 1:4 magnification ratio.

Contax Zeiss 28–80mm

The Vario-Sonnar

Contax 17–35mm

T* 70–200mm f/3.5–4.5 is the perfect lens to cover medium to long-range telephoto applications. The aperture range is very fast, considering the lens has nearly a 3X zoom ratio.

The Vario-Sonar T* 17–35mm f/2.8 is an ultrawide-angle high-speed zoom lens and its autofocus is powered by a quiet, supersonic wave motor.

These three new lenses, when added to the existing four, provide a lens range from 17mm to 300mm to considerably expand the potential of the Contax N-system cameras.

Leica

Leica has two lens systems: the Leica M system for its rangefinder cameras, and the Leica R lenses for its SLR cameras. The M system consists mainly of prime lenses from 21mm through 135mm, with a couple of zooms in the middle. Most have large maximum apertures to help you maintain extremely sharp images in low light situations. Several of the lenses offer a choice of outside finish that include black, sliver chrome and titanium.

The R-series features 30 lenses that range from 16mm to 800mm. Guaranteeing the proverbial Leica quality, these lenses are protected against corrosion, impact and shock resistant, incorporate ball bearings in the automatic iris diaphrams, and they all are equipped with lens hoods.

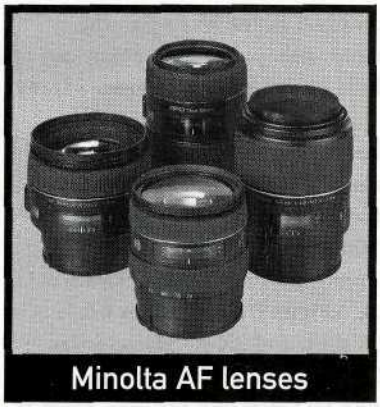
Leica has two new lens offerings in the R-series. The Vario-Elmar-R 21–35mm f/3.5–4 ASPH offers a good working wide-angle zoom range that is sure to be popular. The Super-Elmarit-R 15mm f/2.8 ASPH, with its extremely wide angle of view, is well suited to architectural and landscape photography.

Leica 21–35mm

Minolta

Minolta continues to initiate leading-edge advancements in lens design. They offer a wide selection of autofocus lenses to complement their entire Maxxum AF SLR camera line with focal lengths that extend from 16mm fisheye to 600mm supertelephoto.

New to the line are four new lenses designed to enhance the Maxxum 7 System. The 24–105mm f/3.5–4.5(D) 4.3X zoom is compact and lightweight, yet incorporates three aspheric surfaces to provide outstanding optical quality. The 100–300mm f/4.5–5.6(D) APO is a lightweight and compact 3X telephoto zoom that is going to be a favorite of those who enjoy the outdoors.



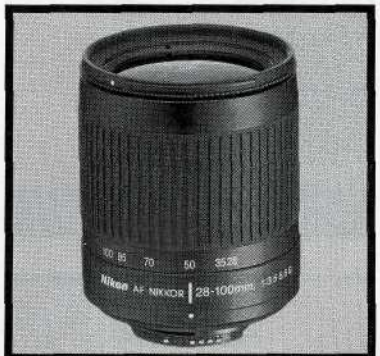
Minolta AF lenses

The Macro 100mm f/2.8(D) is a short telephoto lens with macro capability as close as 1.1 feet and a maximum magnification of 1X (life size). The 85mm f/1.4(D) is a very fast lens with high-quality optics that is ideal for portraiture and the photojournalist. All of these lens except the 24–105mm feature a focus-hold button that allows you to stop the AF drive and release the shutter.

Nikon

Nikon's vast collection of prime and zoom lenses covers just about every photographic situation possible. From the AF 14mm f/2.8D superwide-angle and 16mm f/2.8D full-frame fisheye to the 600mm f/4D supertelephoto, Nikon offers over a dozen AF Zoom-Nikkor lenses, more than a half dozen wide-angle lenses, five macro lenses, almost a dozen telephoto, and even some normal lenses. Whew!

Joining the group is a new 50mm f/1.8D normal lens whose D format provides distance information as part of the flash and available-light exposure process. Portrait photographers get a new lens in the form of a 28–100mm f/3.5–5.6G that allows you to capture portraits and landscapes using the same lens. The new 24–85mm f/3.5–4.5G ED-IF uses the Silent Wave Motor technology for high-speed focusing and quiet operation.



Nikkor 28–100mm

Nikkor 24–85mm

Nikon lenses continue to incorporate some of the latest lens technology. For example, the AF VR Zoom-Nikkor 80–400mm f/4.5–5.6D ED uses new advanced vibration-reduction technology. Their ED lens series uses an Extra-Low Dispersion glass to minimize chromatic aberrations. Other lens designs include IF (internal focus) so the lens does not change size when focused, and RF (rear focus) so that only the rear elements move when focusing.

Olympus

Olympus Zuiko lenses for OM-system SLRs start at

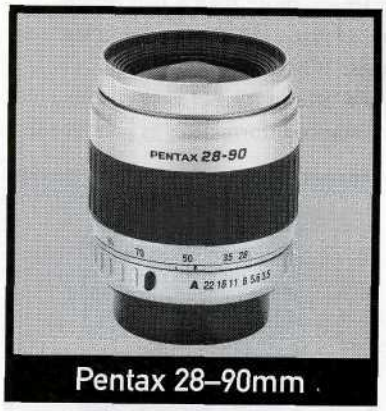
16mm f/2.8 fisheye and continue all the way up to the 1000mm f/11 super telephoto, although most are now out of production as Olympus shifts its emphasis away from 35mm SLR cameras.

Currently, only the following lenses are available new (OM-system camera users can check used-equipment departments at camera stores, eBay, and other used-gear sources for other lenses): 50mm f/1.2, 50mm f/1.87, 35–80mm f/2.8 zoom, 50mm f/3.5 Auto-Macro, 90mm f/2.0 Auto-Macro, 350mm f/2.8, 400mm f/6.3, 600mm f/6.5, 1000mm f/11, 35mm f/2.8 shift, and 2X-A Teleconverter. The superfast 350mm f/2.8 telephoto is great for wildlife photographers, incorporating UD glass and focusing down to 9.8 feet.

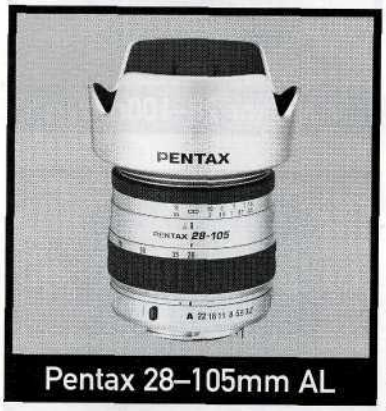
Pentax

Pentax's state-of-the-art technology and manufacturing techniques have produced a wide range of focal lengths in the FA, F, and A/K Series lenses.

The FA autofocus lens system offers power-zoom capability, extra-low dispersion elements, internal focusing, and one touch manual focus. Two of the newest entries include the SMC-FA 28–90mm f/3.5–5.6 and the SMC-FA 28–105mm f/3.2–4.5 AL (IF) zooms. Both use a new compact design that makes them among the smallest and lightest zooms in their class.



Pentax 28–90mm



Pentax 28–105mm AL

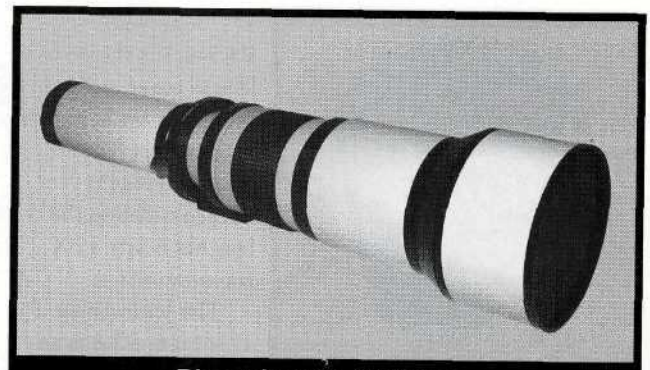
Other Pentax zoom favorites include lenses like the 20–35mm f/4, 35–80mm f/4–5.6, 80–320mm f/4.5–5.6 and unique 17–28mm f/3.5–4.5 fisheye zoom. Long-zoom-lens users will be impressed with the 250–600mm f/5.6 that comes with its very own trunk.

The Pentax A/K manual-focus series includes focal lengths that run the gamut from the 15mm f/3.5 to the 2000mm mirror. Pentax also offers manual focus capability in traditional telephoto, reflex, mirror lenses and tele-converters.

Phoenix/Samyang

The Phoenix Corporation makes economical manual and autofocus lenses for many of today's popular 35mm SLR cameras. Their latest entry is the 650–1300mm f/8–16 supertelephoto zoom, a perfect companion for sports and nature photographers.

Most of the autofocus lens group include zoom lenses that range from a superwide 19–35mm f/3.5–4.5 to the


Phoenix 650–1300mm

100–400mm f/4.5–6.7 supertelephoto. All-purpose zoom lenses include the 70–300mm f/4.5–6.7, which combines wide-angle zoom capability with a long telephoto. The 28–210mm f/3.5–5.6 lens features internal focusing, and aspherical elements for sharp, crisp pictures. Phoenix also markets the reasonably priced Samyang 75–300mm lens.

Phoenix digital telephoto

Digital camera users will be happy to find that they can find a wide assortment of lens converters for wide-angle, telephoto, and macro photography. Most of these converters screw directly in the front of the camera, just like a glass filter.

Sigma

Sigma is a manufacturer of lenses for most popular 35mm cameras like Minolta, Nikon, Canon, Pentax, and their own Sigma SLR cameras. Sigma uses aspherical lens elements to enhance optical performance, minimize lens size and weight and help minimize lens flare and edge distortion.

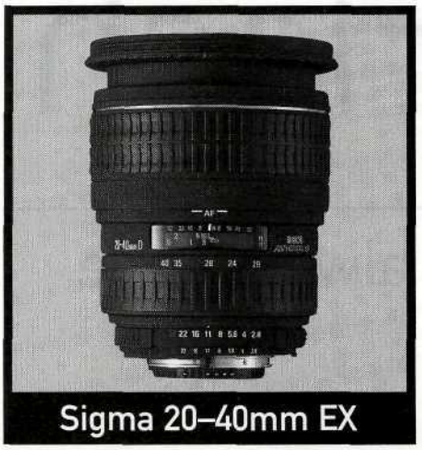
Their most recent additions include short-focus zooms that feature large apertures and wide-angles designed with the digital SLR camera in mind. The first is a 15–30mm f/3.5–4.5 EX Aspherical BG DF lens that becomes a 22.5–45mm lens when attached to a typical digital SLR body. It has a minimum focusing distance of 11.8 inches and is equipped with Dual Focus mechanism.

Sigma 15–30mm EX

The new 20–40mm f/2.8 EX Aspherical DG DF zoom maintains a constant f/2.8 throughout its entire zoom range.

It can focus down to 11.8 inches at all focal lengths and has a maximum magnification ratio of 1:4.6.

The 24–70mm f/2.8 EX DG Aspherical DF offers a standard zoom range with a large constant maximum aperture of f/2.8. The 24–70mm f/3.5–5.6 Aspherical HF zoom lens uses the HF (Helical Focusing) system that allows the front lens group to move when focusing without the front of the lens revolving.

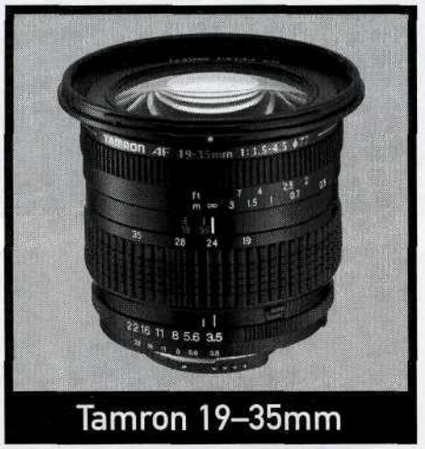

Sigma 20–40mm EX

In addition, Sigma features lenses that range from 8mm circular fisheye to 800mm supertelephoto with a wide variety of lens offerings in-between, sure to satisfy those who love photography.

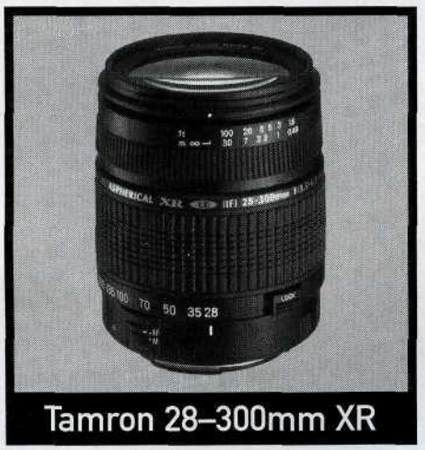
Tamron

Tamron is known for its expertise in optical technology and manufacturing innovations including the "T-mount," the first interchangeable mount system for 35mm SLR cameras. Tamron's extensive line of high-quality AF lenses are compatible with Canon, Nikon, Minolta and Pentax camera systems.

Tamron's most recent additions include two zoom lenses. A superwide 19–35mm f/3.5–4.5 zoom features a view of 63–97°. Its compact size and versatile range make this lens ideal for travel and outdoor photography.


Tamron 19–35mm

The high-ratio 28–300mm f/3.5–6.3 zoom can vary from a 75° angle or view down to 8°. It is 11% shorter and 28% lighter than the previous model and the macro function allows you to get as close as 19.3 inches for a 1:2.9 ratio. It features XR (Extra Refractive Index) glass to reduce the size and improve the optical quality.


Tamron 28–300mm XR

If those two lenses aren't enough, Tamron features AF lenses including a 20–40mm wide-angle zoom, 90mm Macro, 24–135mm, 300mm telephoto lenses and a slew of zooms. They also feature an entire lineup of "Adaptall" manual–focus lenses that use an interchangeable mount system instead of a fixed-mount (the advantage being, if you buy a different-brand camera body, you can just buy a T-mount for it and continue to use all your Adaptall lenses with the new body).

Tokina

Tokina makes a full line of both autofocus and manual-focus lenses for Nikon, Canon, Minolta, and Pentax camera systems. In addition, they also make manual-focus lenses for Yashica and Olympus.

The AT-X or Advanced Technology-Xtra group of lenses are manufactured using the most advanced design and fabrication technology available. The AT-X Pro series lenses include 17mm, 20–35mm, 28–80mm, 28–70mm, 80–200mm, and 300mm focal lengths.


Tokina 20–35mm AT-X

Recently Tokina announced the addition of a new series, AT-X PRO SV, to join the popular AT-X PRO line of lines. The first lens in the SV series is the AT-X 287 AAF PRO SV. This 28–70mm zoom features a fast, constant f/2.8 aperture throughout the entire zoom range. It boasts increased use of non-corrosive materials and focuses quickly with its internal focusing mechanism.

Tokina also makes other lens lines like the AF series and several groups of lenses specifically designed for use with manual-focus cameras.

Vivitar

Vivitar offers a full line of autofocus and manual-focus lenses that run the gamut from 19mm superwide to 2000mm supertelephoto. The Vivitar Series 1 autofocus lens group has six AF lenses that capture an extensive range of focal lengths beginning with 19mm and going up to 400mm.

One of the most impressive wide-angle zoom lenses is the 19–35mm /3.5–4.5 that will fit perfectly in the digital camera world. The 100–400mm AF f/4.5–6.7 zoom allows you to cover great distances with a compact lens that only weighs 25.9 ounces and measures 6.3 inches. It even features macro capability and a close minimum distance of 6.5 feet. The 70–300mm f/4.5–5.6 offers a 1:2 macro ratio in a lightweight, wide-range lens.


Vivitar 600–1000mm w/converter

Manual lens users can reach even further with the 600–1000mm zoom that has a teleconverter that takes it up to 2000mm. Vivitar lenses are designed to be compatible with Nikon, Minolta, Canon and some Pentax camera systems. ■