Consider the Possibilities.

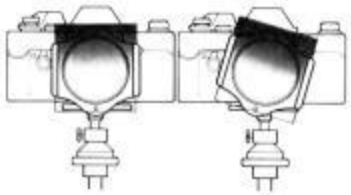
Buying a lens is a long term investment. Properly maintained, a well-designed and constructed lens will last a lifetime. But a lens is more than just aluminum, brass, glass, and steel. It's a creative tool; the "eyes" through which your camera sees the world and its limitless photographic opportunities. When comparing lenses, you should carefully consider which one provides the features that will best serve your needs; not just now, but in the years to come.

If you can't decide between two similar fixed focal length lenses, consider that an extra f-stop or two in lens speed can mean easier focusing, and faster shutter speeds when you're shooting in low light.

If you're trying to decide between a fixed focal length lens and a zoom because you're concerned that the zoom may be too expensive, too slow, too heavy, or not sharp enough, stop worrying. Modern zoom lenses, when well designed and manufactured, are lighter, less bulky, and less expensive than the combination of fixed focal length lenses they would replace. They rival the optical quality and speed of fixed focal length lenses, and beat them hands down when it comes to overall versatility and features.

Special features available on some zoom lenses are worth looking into. Some zooms provide the capability to lock the zoom ring with a switch at a pre-selected focal length, to prevent "zoom creep", the inadvertent movement of the zoom ring due to the effects of gravity when you point the lens straight up or down, or vibration from the use of motor drives or winders. Focusing is then easier to concentrate on, and increased steadiness can be achieved, as you "pull" the lens/camera toward your body without changing the desired focal length.

Some zooms allow you to pre-set one, or two focusing distances so, for example, you can photograph all the non-racing activity that occurs at a track, but "zip" to a pre-selected focusing spot when your favorite driver moves into the turn. None of the action—on the track or off—will escape you.



A non-rotating front barrel can be extremely valuable when you use polarizing, or other special-effects filters that rely on positioning. They won't have to be re-adjusted each time you refocus your lens.

Practical features like these become increasingly important, because they will help you develop your photographic technique as your expertise grows.

There are two basic types of zoom lenses; parfocal and varifocal, and there are specific benefits to either type. A parfocal lens, once focused, remains in focus as you zoom. (Experienced photographers "fine tune" the focus of parfocal lenses to assure critical sharpness just before shooting.) Most telephoto zooms are of the parfocal type.

A varifocal lens remains in focus throughout the zoom range only at infinity, but must otherwise be refocused if you zoom from one focal length to another. Wide-to-telephoto zooms may be parfocal or varifocal. A parfocal design usually requires more lens elements, and more expensive lens elements, and decentration tolerances are even more critical. (Because of the large degree of change in the angle of coverage, aberrations are harder to correct.) A varifocal design eliminates the need for a compensating lens group (that which maintains focus as you zoom), and can have the advantages of lower cost, compactness, and less chance of decentration.

Rather than using a cammed iris, a manufacturer can instead let the apertures "float". A cammed iris reduces the apertures at the shorter focal lengths to match the slower apertures at the longer focal lengths. The apertures stay the same throughout the range, but you lose overall lens speed. By letting the apertures "float" you get faster apertures in the wide angle range to allow easier focusing and shooting in low light.

Whether a wide-to-normal, wide-to-telephoto, or short-to-long telephoto, all zooms allow you the convenience of being able to change the image size without changing lenses or your distance from the subject.

Macro focusing zooms are even more convenient, allowing you to focus from infinity to ⅓ life-size, or greater. Continuous macro focusing zooms increase the convenience, but even non-continuous macro focusing lenses can be manufactured in such a way as to let you move to the macro position quickly and easily, without special switches and levers.

When comparing macro focusing zooms, remember also to compare their working distances (the distance from the front of the lens to the subject). Given two lenses that both focus to ¼ life-size, the one with the greater working distance will allow you more flexibility in lighting and photographing elusive subjects.

Enlightenment.

As you can see, there IS a better way to buy a lens than blindly relying on myth, hype, rumor, or advice. It's really not that hard once you know what to look for, and how to find it.

By the way, if you're wondering how well Kiron lenses rate according to the standards you've just read about, we have a confession to make. Those standards are our standards. And they are incorporated into every Kiron lens we make. Which makes it very easy for us to back each Kiron lens with an iron-clad, 5-year limited warranty.

Now that your eyes are open, take your Canon, Nikon, Minolta, Olympus, Pentax, Konica, Yashica, or Contax camera body to your Kiron dealer. Take a good look at Kiron's price, quality, and versatility. We like being looked at, and you'll like what you see.

KIRON CORPORATION
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A subsidiary of Kino Precision PART NO. 004

KIRON

How to Buy a Lens with your Eyes Open.

Buying a Lens with your Eyes Open.

The fact that you are reading this pamphlet suggests you're interested in buying a lens. Common sense tells you that because lenses vary in price, they must also vary in quality. And all lenses vary in features. You probably also have the sneaking suspicion that although expensive lenses tend to be of high quality, not all high quality lenses are expensive. The problem is, you can read ten different brochures, ads, and test reports, and get ten different impressions of what lens has it all: price, performance, and versatility.

As a leading manufacturer of 35mm single lens reflex camera lenses, having made over 3 million zoom and wide angle lenses in the past 20 years, we'd like to present you with some eye-opening information about the best way to find such lenses. Of course, our reasons for doing so aren't entirely unselfish. We think the more you know about buying lenses, the greater the chance you'll buy one of ours.

The Inside Story.

There are some things that you can't actually see when you look at a lens, but that will have a significant effect on its long term performance and reliability. Here are some of them.

Multicoated Lens Elements. Multicoating reduces flare and ghosting, and increases light transmission and contrast while keeping spectral transmittance consistent. Elements should be heated to between 280° and 300° C, and have coatings applied in a vacuum chamber as they are rotated in a planetary motion. This ensures optimum uniformity and durability. Hand coating element edges with an opaque black paint also reduces internal flare and reflections.

Strong, Lightweight Lens Barrels. A lens barrel is what holds elements, focusing helicals, zooming cams and centration retainers in place. It must be durable, and capable of being machined to tolerances as close as ±0.01mm. But it must also be lightweight, to maintain a balance with today's compact camera bodies. Most lens barrels are made from a seamless, aerospace quality aluminum alloy, hardened for at least 2 hours at 280° C.

For an attractive, long-wearing finish, the barrel should be anodized (the finish bonded to the metal) inside and out. As an added touch, the manufacturer may diamond-turn the finish, a process where approximately 50 microscopically thin lines are cut per millimeter giving the lens barrel a satin-like luster.

Centration. Poorly centered elements mean reduced resolution in a lens. Top optical designs call for centration tolerances of ±0.015mm or greater, but not many lenses meet those standards. In a zoom lens, centration is even more critical, because lens groups move over greater distances, and are more apt to become decentered. Some lenses utilize a single zoom support system, but a dual support mechanism is more desirable, because it keeps elements balanced and perpendicular to the film plane. This also results in smoother, more reliable zooming and focusing.

Low Friction Diaphragm Assembly. High quality lenses utilize up to 200 ball bearings in the diaphragm actuating assembly to reduce friction. This permits actuating times of 25-28 milliseconds, consistent with the demands of cameras that have very fast shutter speeds, and use motor drives or winders.

The number of diaphragm blades used is important, too, because the more blades, the more the shape of the aperture approaches that of a circle. Off-axis aberrations are better controlled. The iris diaphragm of an SLR lens should have at least six blades, as this allows for a hexagonal aperture and small minimum apertures of f/22, for greater depth-of-field.

Durable, Precision Lens Mounts. Lenses made for a specific camera brand should have specifications and tolerances comparable to the camera maker's mount. To ensure full compatibility with the cameras the lens is designed for, the manufacturer should continually test each type of lens mount for proper fit. High quality lens mounts are made from materials such as hard chrome-plated brass or stainless steel, machined to a tolerance of ±0.02mm, and fastened with at least three screws for stability.

Premium All-weather Lubricants. An inexpensive way to manufacture lenses is with low metal-to-metal tolerances, taking up the slack with grease. But greases have a tendency to liquify and spread at high temperatures, and harden at low temperatures. The effects of extremes in weather would soon be apparent. A better way to make lenses is with extremely tight tolerances, so "dry" lubricants, such as Losimol (made up of synthetic oil, mineral oil, and lithium soap), can be used. Dry lubricants can be used over temperature ranges of -30° to 80° C (-22° to 176° F), which actually exceed the coefficients of expansion and contraction of the aluminum lens barrel mechanisms themselves.

Tight Quality Control. As important as any of these is a manufacturer who takes the steps necessary to ensure their lenses are assembled to uniformly high standards of quality. Elements should be cleaned and centered in a dust-free environment, and every lens should be tested for resolution, focusing accuracy, and iris timing. Finally, lenses should be inspected for freedom from dust and cosmetic defects.

What Meets the Eye.

Even though you can't see everything a manufacturer puts into (or leaves out of) their lenses, there is a way to look for quality.

1. Check for a smooth, flawless finish, with clear, clean markings. The focusing grip should be seamless vinyl, and feel rugged and secure.

2. Remove front and rear lens caps and look into the lens. You should see a dark tunnel, with no shiny surfaces, globs of lubricant or frosted element edges. The diaphragm blades should be clean and symmetrical, and move freely when actuated. If you use a motor drive, or winder, test the lens on a motor driven camera to be sure the diaphragm has no trouble keeping up with the shutter, especially at smaller apertures.

3. The lens mount and coupling mechanisms should appear at least as sturdy as those on your camera. The lens should mount easily and securely. Focusing should be smooth, and zoom action should have just enough friction to prevent the zoom/focus ring from sliding out of position when the lens is pointed up or down.

4. Take note of the warranty offered, and what it covers. Almost all warranties last a minimum of one year, but some are as long as five. This gives you a good idea of the confidence the maker has in the lens over the long haul.

5. Look for the manufacturer's name on the lens. Some lens suppliers omit this because they would prefer you didn't know who they buy their lenses from.

70–210mm f4 Macro Focusing Zoom with Zoomlock™ and Focustop™

KIRON

Angle of View Comparison


24mm


28mm


35mm


50mm


70mm


85mm


105mm


135mm


200mm


400mm

Macro

All Kiron zoom lenses provide a reproduction ratio of 1:4. Used with the 2X MC7, Kiron zooms allow for 1:2 magnification, as do both 80-200mm lenses when used with the Reverse Mate Adapter. For greater than life-size (1:1) images, use the Reverse Mate with the 28mm for 2.5:1; with the 24mm for 3:1.


1:4


1:2


1:1


2.5:1

Telephoto Zoom

70-210mm f4
Macro Focusing Zoom
with Zoomlock™
and Focustop™

80-200mm f4.5
Macro Focusing Zoom
with Zoomlock™

80-200mm f4.5
Macro Focusing Zoom

Kiron Telephoto Zooms

Kiron's 70-210mm f4.0 telephoto zoom incorporates three very special features. ZOOMLOCK™ allows the photographer to "lock-in" a selected focal length, then focus normally, and shoot without concern about inadvertently changing that focal length. FOCUSTOP™ permits pre-setting one, or two of 35 different focusing distances. You may be photographing the baseball team's mascot just in front of you, but when you notice that base runner start to steal second, you'll "zip" to a focusing distance you pre-set earlier, and record what may be the best "slide" of the season. ZOOMLOCK and FOCUSTOP are both patent-applied-for features. The NON-ROTATING FRONT BARREL means that polarizing, or other position-sensitive filters won't change their position as you focus on your subject.

Two 80-200mm f4.5 tele-zooms—one with ZOOMLOCK and NON-ROTATING FRONT BARREL, both with Kiron's standard features and quality.

All Kiron tele-zooms have continuous, one-touch macro focusing to ¼ life size.

***Kiron 70-210mm f4 Macro Focusing Zoom with Zoomlock™ and Focustop™**

Aperture Range: f4.0-f22
Angles of Acceptance: 34°-11°
Min. Focus. Dist.: 1.15m (45")
Max. Repro. Ratio: 1:4
Accessory Size: 62mm
Lgth. at Inf. Focus:
150mm (6")
Weight: 863g (31 oz.)

Kiron 80-200mm f4.5 Macro Focusing Zoom with Zoomlock™

Aperture Range: f4.5-f32
Angles of Acceptance: 30°-12°
Min. Focus. Dist.: 1.05m (41")
Max. Repro. Ratio: 1:4
Accessory Size: 55mm
Lgth. at Inf. Focus:
139.5mm (5.5")
Weight: 624 g (22.3 oz.)

Kiron 80-200mm f4.5 Macro Focusing Zoom

Aperture Range: f4.5-f32
Angles of Acceptance: 30°-12°
Min. Focus. Dist.: 1.05m (41")
Max. Repro. Ratio: 1:4
Accessory Size: 55mm
Lgth. at Inf. Focus:
139.5mm (5.5")
Weight: 588 g (21 oz.)

**Availability Summer 1983*

Accessories

MC 7

Reverse Mate

Kiron MC7 is a highly-corrected, general purpose 2X teleconverter. The multi-coated, seven-element design makes it a perfect companion for zoom lenses, and normal lenses, too. Adding it to your prime lens doubles the effective focal length of that lens, and also doubles the reproduction ratio.

Kiron Reverse Mate is designed for use with lenses that have a 55mm accessory size, and allows the lens to be mounted in reverse, for increased reproduction ratios.

Wide-Telephoto Zoom

28-105mm f3.2-4.5
Varifocal Macro
Focusing Zoom

35-135mm f3.5-4.5
Macro Focusing Zoom

Kiron Wide-To-Telephoto Zooms

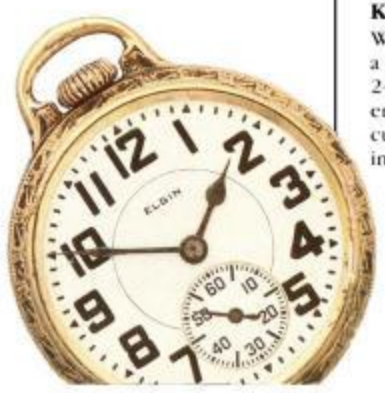
Kiron's wide-to-tele zooms, the 28-105mm f3.2-4.5, and 35-135mm f3.5-4.5 are extremely versatile. They allow you to take wide angle scenics to telephoto candids, and everything in between, without changing lenses, or camera-to-subject distance. Both lenses have macro capability to ¼ life-size.

Kiron 28-105mm f3.2-4.5 Varifocal Macro Focusing Zoom

Aperture Range:
f3.2-f16 at 28mm
f4.5-f22 at 105mm
Angles of Acceptance: 75°-23°
Min. Focus. Dist.: .27m (10.3")
Max. Repro. Ratio: 1:4
Accessory Size: 67mm
Lgth. at Inf. Focus:
112.5mm (4.5")
Weight: 686 g (24.5 oz.)

Kiron 35-135mm f3.5-4.5 Macro Focusing Zoom

Aperture Range:
f3.5-f16 at 35mm
f4.5-f22 at 135mm
Angles of Acceptance: 62°-18°
Min. Focus. Dist.:
Standard Mode - 1.5m (60")
Macro Mode - 292mm
(11.5")
Max. Repro. Ratio: 1:4
Accessory Size: 62mm
Lgth. at Inf. Focus:
114mm (4.5")
Weight: 708 g (25 oz.)



Wide Angle

24mm f2.0

28mm f2.0

Kiron Wide Angle Lenses

We offer two wide angle lenses, a high-speed 28mm f2.0, and a 24mm f2.0 for even more coverage. Both allow for easy focusing, and fast shutter speeds in low light situations.

Kiron 24mm f2.0

Aperture Range: f2.0-f16
Angle of Acceptance: 83°
Min. Focus. Dist.: 0.3m (12")
Accessory Size: 55mm
Lgth. at Inf. Focus: 47mm (2")
Weight: 288 g (10 oz.)

Kiron 28mm f2.0

Aperture Range: f2.0-f16
Angle of Acceptance: 74°
Min. Focus. Dist.: 0.3m (12")
Accessory Size: 55mm
Lgth. at Inf. Focus: 47mm (2")
Weight: 284 g (10 oz.)