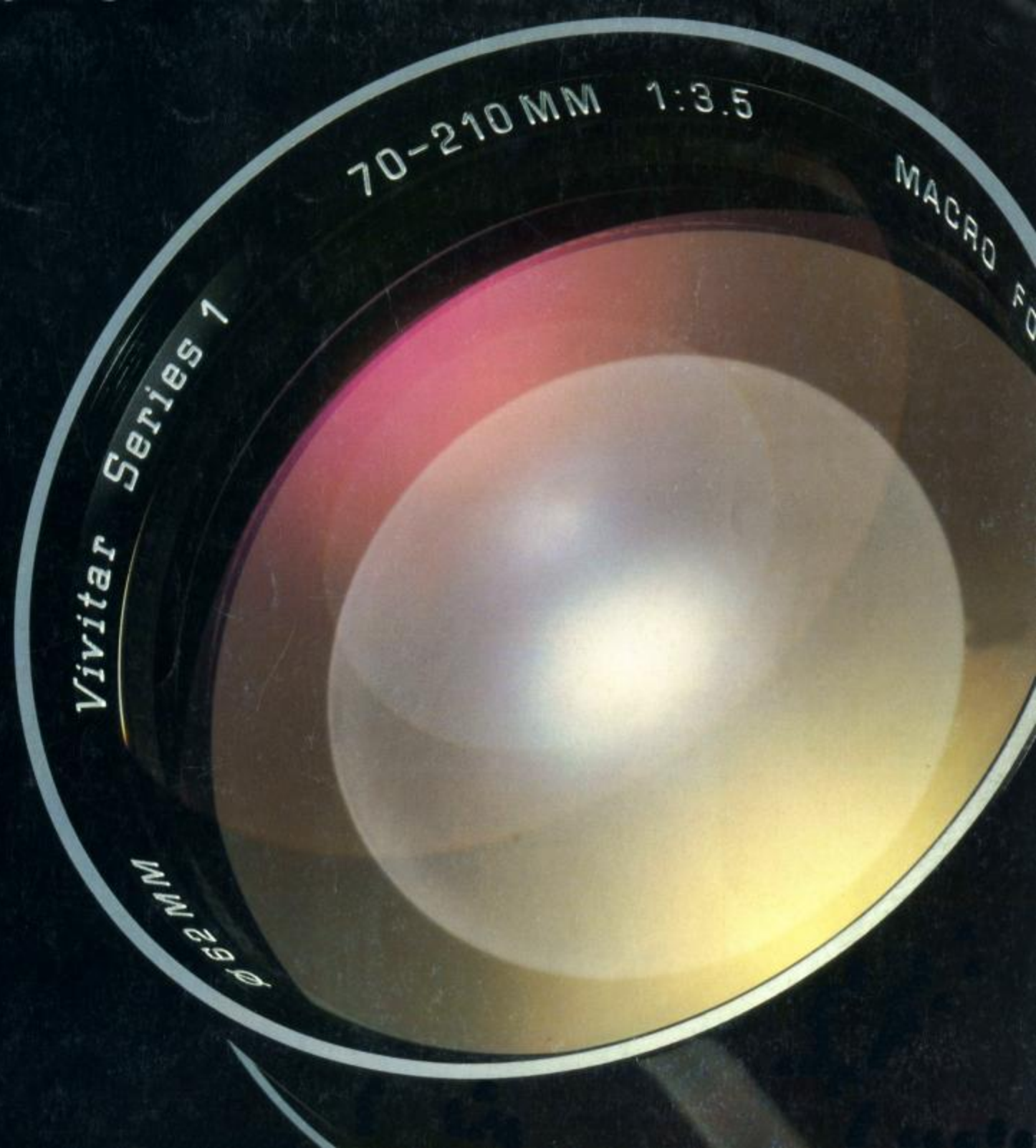


Vivitar lenses

Vivitar®



High performance
lenses by Vivitar



A Vivitar 75-205mm with Matched Multiplier™ stops the action at the starting gate. We shot this with Ektachrome™ 400 at 1/500 sec., f8, from a distance of 250 feet.

If you want to see some of the world's finest lenses, you've come to the right place. Vivitar.

We sell more fine lenses than anyone else because we use one of the world's leading optical design teams, Opcon. Who, when not pioneering innovations for Vivitar such as the first flat field zoom lens, the first two-to-one macro zoom, and the first four-to-one continuous macro-focusing

zoom are designing superior optics for NASA.

Part of design is assigning the appropriate raw materials, and we use the best. Such as Lanthanum rare glass for our elements. Anodized aerospace aluminum alloy for our lens barrels. Chrome-plated brass for our mounts. And Delrin® coatings on our cam guides.

After subjecting the finalized design to the most sophisticated human and mechanical examination known to man, we

use the most modern and precise manufacturing techniques known to man.

And after all that we get tough. We put our lenses through a battery of tests more demanding and more critical than anybody else's, including the tests of the Japan Camera Inspection Institute. Then the only thing left is to take a

lens completely apart and check every single cam guide, every single screw. If it passes, then it receives two things. A five year warranty and our highest endorsement: our name.

The next time you need a lens for your Canon, Minolta, Nikon, Olympus, Pentax, or other popular 35mm SLR body, look at every one of our high performance lenses. Including our world famous Series 1®. Vivitar. Because there's something else you'll get besides a great lens. Great pictures.

Fixed focal length

If you see a focal length on the right that you love, we've got something else you'll love. Extremely high quality.

Like lens design done with highly advanced computer programs. Manufacturing to precision tolerances, with minimum allowances for error. Like testing *after* the lens has been shipped; testing done by the most complete testing lab in the U.S.

Many other companies will let you pay more, but nobody will give you more. Time after time, we've matched our lenses against ones costing four times as much and they couldn't be surpassed in performance.

And we precisely fit all our lenses to your Canon, Minolta, Nikon, Olympus, Pentax, or other popular SLR camera.

Take a look at a Vivitar fixed focal lens. (And its features.) It'll open your eyes.



A Vivitar 17mm Super Wide Angle pulls in all the colors of the silks room. A fluorescent light correction filter was used to shoot this at 1/8 sec., f11. The long exposure required the use of a tripod.



17mm f3.5 Wide Angle Lens.

Vivitar's widest of the wide delivers dramatic shots with minimal distortion □ Angle of acceptance of 104° for dramatic extra-wide shots □ 11 elements in 9 groups enhance resolution and contrast □ Minimum focusing just 10 inches from film plane.

24mm f2.0 Wide Angle Lens.

A compact, lightweight, extremely fast lens which delivers outstanding clarity and performance □ Length of just 1.9 inches (47mm) and light weight of just 9 ounces (256g) make this an ideal lens for today's compact SLR's □ Ultra-short focusing rotation permits fast, easy focusing even with unexpected candid.

28mm f2.0 Wide Angle Lens.

A hard working, extremely fast lens in the most popular wide angle focal length □ Compact and lightweight — just 1.8 inches long (46.7mm), 8.6 ounces (245g) □ Extremely fast — even performs wonderfully at dawn, sundown, or indoors □ Focuses precisely — close as 12 inches □ 75° angle of view for travel panoramas or groups.

28mm f2.8 Wide Angle Lens.

A lightweight, very affordable lens that offers unusually smooth focusing □ The perfect traveler — just 1½ inches long (40mm), weighs just 7

ounces (200g) □ Ideal for today's compact SLR's □ Sophisticated lens design for extremely smooth focusing and high resolution.

55mm f2.8 Macro Lens.

A normal lens with the unique capabilities of macro with no extenders or adapters required. Gives life-size reproduction of 1:1 □ 5 element, 4 group lens construction □ High resolution at all magnification ratios □ All the advantages of a normal lens plus macro in just one lens.

135mm f2.8 Telephoto Lens.

This focal length is commonly used for attractive portrait work and also suited for candid and action

photography □ Perspective of this lens adds a pleasing look to all facial photography □ Versatile focal length □ Multicoated optics increase light transmission, reduce flare and ghosting.

400mm f5.6 Telephoto Lens.

Extreme telephoto capability for wildlife and sports, intended for situations where you just cannot get close to the subject □ Extraordinary telephoto power in a lens with 5 elements in 5 groups for optimal performance with minimum size and weight □ Focuses quickly and accurately for fast action shots □ Multicoated to reduce flare.

Wide to mid-range zooms

Many professional photographers consider their wide angle to midrange zoom the most versatile. Perfect for portraits. Landscapes. Still lifes. Interior shots of all kinds.

So when we developed a superlative mid-range zoom line, we relied on the highest quality standards available. Ours.

What did we get? The Vivitar 28-85mm Zoom, for example. Our design team gave us maximum aperture (f2.8) that was unsurpassed in its zoom range. But the best part is, the Vivitar 28-85's resolution characteristics couldn't be outdone by any of the other 12 leading lenses tested by Popular Photography Magazine.

We also did a couple things to assure you'll get that quality for years to come. We used up to 200 ball bearings in the diaphragmactuating assembly to reduce friction and exceed the speed needed to keep up with a motor drive. And we used computerized cam cutting to achieve unforgiving tolerances of ± 0.1 mm which gave it a precision durability that will never slow you down.

If you're impressed with the Vivitar 28-85mm, take a look at our 35-70mm macro and our 28-50mm Zoom because they get the same kind of special treatment.

And if you're wondering why we go to all this trouble to bring you terrific wide angle to mid-range zooms, there's a really good reason.

We're perfectionists.

We shot this with a Vivitar 28-85mm at 80mm. We chose f.8 at 1/30 sec. on Ektachrome™ 400 using a tripod. But it's nice to know we could have gone to f3.5 or f2.8.





28-50mm f3.5-4.5 Zoom Lens.

An extremely compact, yet versatile lens. Great for scenics, landscapes, group portraits □ Replaces need for 28mm, 35mm and 50mm lenses □ One-touch control lets you frame and focus in one easy, continuous motion □ Weighs just 10 oz. (280g)—a snap for travel □ Stops down to f32 for extreme depth-of-field □ Multicoated optics to reduce flare and ghosting.



28-85mm f2.8-3.8 Macro-Focusing Zoom Lens.

An incredibly fast wide angle-to-telephoto lens that's also macro-focusing. Use for panoramas, portraits, and macro □ One-touch operation for maximum flexibility and ease of use □ Macro-focusing to 1/4 life size □ Unique design offers both compact size and speed □ Multicoated to reduce flare and ghosting.

35-70mm f2.8-3.8 Macro-Focusing Zoom Lens.

Vivitar's affordable wide-to-tele zoom offers excellent sharpness, as well as being incredibly lightweight and compact. Excellent for travel photography □ Macro-focusing too □ Opens up new framing and crop-on film possibilities unavailable with normal lens □ Smooth one-touch zoom-and-focus control enables you to catch that perfect shot before it gets away □ Continuous macro-focusing enables you to zoom and compose within the macro mode without moving forward or backward □ Multicoated to reduce flare and ghosting.

Extended-range zooms

There's nothing more frustrating than seeing a great photo opportunity, but not having a lens long enough to reach the action. And there's nothing more disheartening than realizing you can't afford that lens.

That's why there's a Vivitar.

Our 70-150mm and 75-205mm Zoom Lenses offer something in addition to exceptional range and speed. Something in addition to flat field resolution throughout the zoom range. Something in addition to greater working distance within the macro range. Something in addition to continuous macro-focusing to $\frac{1}{4}$ life size. (Which gives you greater compositional control by letting you zoom within the macro range.)

Double all that. With Vivitar's inexpensive and innovative 2X Matched Multiplier™. It doubles both the focal length and macro capability (to $\frac{1}{2}$ life size). And because the Matched Multiplier is computer-designed to fit only the lens it's made for, you can expect excellent resolution.

If you want twice as much from your 75-205mm or 70-150mm Zoom, get the Matched Multiplier that is designed exclusively for that lens.

Either way, you get something else that is truly extraordinary. The price.



We ran this shot down but kept the dirt off our lens with a Vivitar 75-205mm with Matched Multiplier™ at 410mm. We shot from a distance of 30 feet at 1/1000 sec., f11, using Ektachrome™ 400.



70-150mm f3.8 Macro-Focusing Zoom Lens.

An extremely compact zoom that's ideal for portraits, scenics, and travel photography. Macro-focusing too

- Less than four inches long
- One-touch zoom-and-focus control lets you frame and focus in one fast, easy motion
- Continuous macro-focusing up to $\frac{1}{4}$ life size
- Optional 2X Matched Multiplier™ provides up to 300mm reach for a fraction of the

cost of extra lenses. Doubles macro reproduction ratio to $\frac{1}{2}$ life size

- Multi-coated optics to reduce flare and ghosting.

75-205mm f3.8 Macro-Focusing Zoom Lens.

A zoom with enormous reach for portraits, nature, concerts, sports and action. Offers macro-focusing, too

- A fast, versatile lens with convenient one-touch zoom-and-focus control so you won't miss that fleeting shot
- Continuous macro-focusing up to $\frac{1}{4}$ life size
- Produced with a combination of Lanthanum rare earth glasses to achieve maximum contrast and resolution
- Optional 2X Matched Multiplier™ gives the 75-

205mm zoom lens a 150-410mm focal range and $\frac{1}{2}$ life size macro-focusing capability.



2X matched Multiplier™ for Vivitar Telephoto Zoom Lenses.

The Vivitar 2X Matched Multiplier is a doubler specifically designed for a single lens. It is optically "matched" to ensure image quality

- The 2X Matched Multiplier for the 70-150mm f3.8 Macro-Focusing Zoom Lens doubles the focal length to 300mm
- The 2X Matched Multiplier for the 75-205mm f3.8 Macro-Focusing Zoom Lens doubles the focal length to 410mm
- It virtually eliminates image degradation normally associated with most doublers
- The 2X Matched Multiplier increases macro-focusing to $\frac{1}{2}$ life size.

Telephoto zooms

Zooming-in with a telephoto lens is the best way to capture everything from sports, wildlife, and action to portraits, concerts and candid.

And Vivitar telephoto zooms are the best way to bring the action to you, by giving you perfectly balanced one-touch zoom and focus driven by two, not one, cam-in-groove mounts. Effortless control because of special internal metals, coatings, and lubricants. Precision guaranteed by computer-controlled manufacturing and assembly techniques. And of course, with resolution characteristics that put lenses costing twice as much to shame.

Shoot with the Vivitar 75-300mm Close-Focusing Zoom, the 80-200mm Zoom, or the new, compact, macro-focusing 80-200mm Zoom. All deliver outstanding photographic versatility and superior performance.

Get a Vivitar Telephoto Zoom Lens. And get a piece of the action.

This shot, taken during morning workout, is an exercise in composition. Using a Vivitar 80-200mm zoom at 200mm, we were able to compress the elements in the shot to create a striking design. This was shot at 1/250 sec., f/5.6, on Ektachrome™ 64 from a distance of 300 yards.





80-200mm f4.5 Zoom Lens.

An inexpensive midrange to telephoto lens perfect for anything from portraits to wildlife □ Uses an innovative Vivitar design for extremely sharp results throughout entire range □ Rugged and reliable □ One-touch zoom and focus control □ Multicoated to reduce flare.

80-200mm f4.5 Macro-Focusing Zoom Lens.

One-touch zoom perfect for portraits, candid, and scenic. Macro-focusing, too □ Multicoated to reduce flare □ Extremely compact and light enough to travel with □ Magnification of up to 1:3 at 80mm □ Accepts 55mm accessories.



75-300mm f5.6 Close-Focusing Zoom Lens.

Takes you from short portrait range all the way to 300mm for sports, action, and wildlife photography □ 4:1 zoom range for extra versatility □ Close-focuses to 1:5 at 75mm □ One-touch operation for ease and speed □ Remarkably compact and lightweight for this focal range □ Accessory size of 58mm.

Vivitar Series 1[®]

We don't use the Series 1 name very often. We save it. It has a very special meaning to us. Series 1 is Vivitar's name for the uncompromising design and superb performance of a highly desirable, highly specialized optical task. Series 1 means the best. Not just "the best for the money". The best. Series 1 is a promise. It says, "this lens not only does something incredible. It does it incredibly well".



Thoroughbred by a Thoroughbred: Vivitar Series 1 28-90mm at 90mm underexposed one stop to capture detail in the highlight area. It was shot at 1/250 sec., on EktachromeTM 64.



Vivitar's new Series 1® 28-90mm f2.8-f3.5 macro-focusing zoom lens. The leading edge.

The development of the 28-90mm lens presented Vivitar optical designers with an incredibly complex set of design problems:

Four main requirements were established. The lens had to cover 28-90mm, an unprecedented zoom range. It had to have an extremely fast maximum aperture. It had to be small and light enough to match today's compact cameras. And, of course, it would have to meet the stringent quality and performance requirements that are the hallmark of Series 1®.

To meet these objectives called for a unique approach, something well beyond currently available optical designs.

In order to achieve the wide zoom range while maintaining the compact size, a tremendous amount of optical magnification in the main negative power group was needed. In itself, this would be simple. But we insisted on obtaining this without the aberrations which are normally associated with this degree of magnification.

An intensive effort began. To speed up the development process and to reach a mathematical precision just not humanly possible, we used an extraordinarily sophisticated computer program.

With the help of the computer, we discovered a novel way to construct the power group. Due to the design of the group, the shape of the elements, and the use of tantalum glass, the needed magnification was obtained while minimizing astigmatism and rectilinear distortion. In fact, the design was so exceptional we patented it.

But we weren't finished. We added a singlet element fixed near the diaphragm; another patented innovation. This made possible a maximum aperture of f2.8 and corrected the distortion often present in fast wide angle to portrait zoom lenses.



Then, to assure Series 1 quality, we did even more. We utilized rare earth tantalum and lanthanum glasses to minimize aberrations. We hand-painted the edges of the lens elements to eliminate internal reflections. And we coated the cam guides with Delrin® for smooth one-touch zoom and focusing.

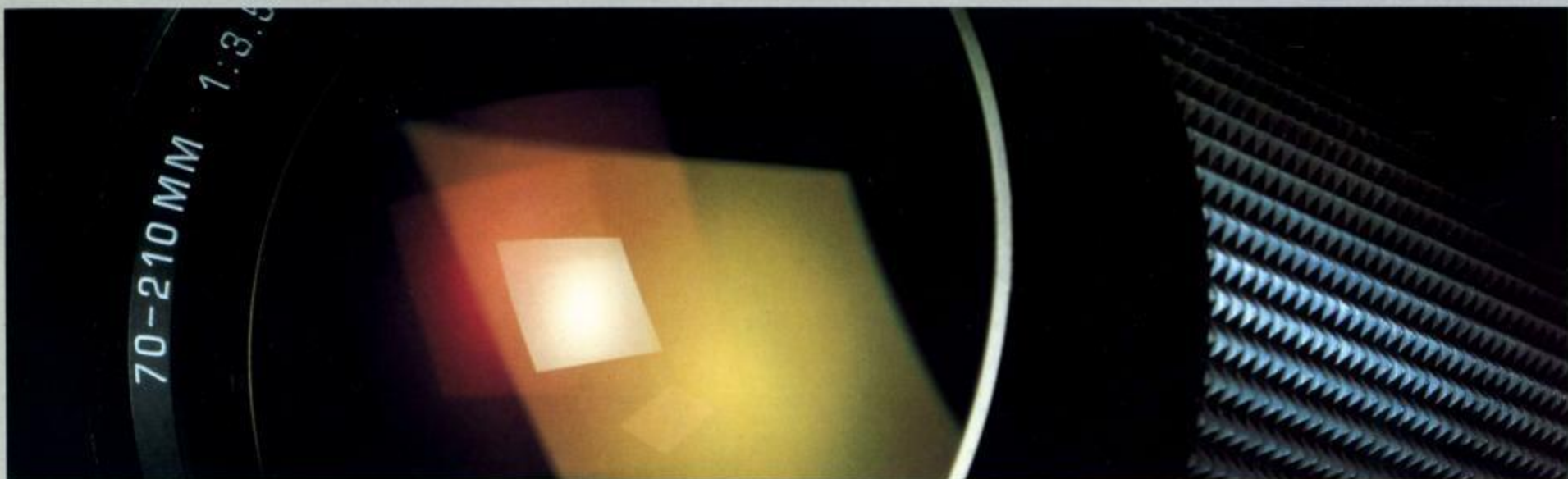
All this means that when you decide on the Vivitar Series 1 28-90mm lens you'll be getting a truly superior piece of optical equipment. A lens with resolution and contrast specifications that go way beyond what many other lenses offer. You'll be assured of performance that takes you where Series 1 has always taken you. To the top.

The Vivitar Series 1 28-90mm lens is manufactured to fit precisely most popular 35mm SLR cameras including Nikon, Canon, Minolta, Olympus and Pentax.

Vivitar Series 1[®]

The Vivitar Series 1 70-210 Macro Focusing Lens at 200mm gave us the distance to let window light sculpt the subtle mood in this close-up study. Using a tripod we shot this at 1/4 sec. f16 using Ektachrome™ 64.





Vivitar's new Series 1® 70-120mm f3.5 continuous macro-focusing zoom lens. The next generation.

The Series 1 70-210mm lens story really must be told in two parts: the old and the new.

When the Series 1 70-210mm first appeared a decade ago, it radically changed the world's perception of zoom lenses. Suddenly, there was a zoom lens with the resolution characteristics of a fine fixed focal length lens. This was made possible by using a unique and proprietary computer optimization program.

The result? Macro capability, one-touch control and an extremely fast f3.5 maximum aperture.

Almost from the beginning, the old 70-210mm became the standard of the industry.

But we wanted more. We wanted a lens that would do everything the old lens did yet be lighter, smaller, with even more features and demonstrably superior performance.

It was a mind boggling challenge. Vivitar's experts quickly agreed that the original lens couldn't be improved upon with small design niceties. The task called for a total reworking of the lens, requiring an extremely sophisticated computer program to deal with the multitude of variables.

Based upon Vivitar's pioneering work on continuous-focusing Series 1 zoom lenses, the optical design team made an astounding discovery: front group focusing could be extended to include the macro range if the appropriate design configuration were found.

The individual design and exact positioning of each element was an incredible orchestration. Finally, the new arrangement of 14 elements in

10 groups was discovered. The new Vivitar Series 1 70-210mm *continuous macro-focusing* lens, unlike conventional zooms, allows you to zoom within the macro range, thus giving you greater compositional control. Also, the minimum working distance is approximately three times longer than non-continuous macro-focusing telephoto zooms for convenient lighting and greater ease in tracking small moving objects.

In addition to the new optical design with its benefits, an improved mechanical design offers several positive results as well. One of these is the additional stability of element centration which contributes to superior image quality. The innovative mechanical buffer system minimizes internal reflections, again

resulting in superior image quality by improving resolution and contrast.

But not everything changed. The Vivitar Series 1 70-210mm still has the fastest maximum aperture of any one-touch zoom in its focal range: f3.5. There's still a dual support mechanism to ensure proper lens centration. And multi-start helical threads, and zooming cams milled to a tolerance of less than 2/100th of a millimeter for smooth zooming and focusing.

There you have it, the only zoom that could make you forget the old Series 1 70-210mm.

The new Series 1 70-210mm by Vivitar.

The Vivitar Series 1 70-210mm lens is manufactured to fit precisely most popular 35mm SLR cameras including Nikon, Canon, Minolta, Olympus, Pentax, Konica and Yashica/Contax.

Accessories

We can help your camera find great pictures where it never could before. With Vivitar filters to correct light or to create effects. With Vivitar optical accessories to extend the capabilities of your lenses. And Vivitar lens cases to protect them.

Vivitar VMC filters are precision made from the highest quality optical glass and polished to plano-parallel flatness. They can be used in combination, or with other lens accessories and are available in most popular styles and sizes.

Vivitar's optical accessories add range and versatility to your existing lenses. The precision made close-up lens set, +10 macro adapter and extension tube options let you get up close and personal. Or maybe you want to go the other way with Vivitar Tele-Converters.

Or, better yet, go both ways with our newest product, the Vivitar Macro Focusing Teleconverter. As a premium quality 2X teleconverter, it effectively doubles the focal length of the lens it's used with while maintaining the resolution and contrast of any fine optic at a higher level than most standard teleconverters. In addition, it's unique focusing mechanism enables you to do macro (1:1 life size with a 50mm lens) without adding other equipment.

Vivitar gives your 35mm camera the lenses, filters, and accessories to see something really worthwhile. The unexpected.

The Vivitar Macro Focusing Teleconverter on Vivitar's 55mm Macro lens was our ticket to taking this picture at twice life size. Use of a tripod on a shot like this is essential as our exposure was a full second with our lens stopped down to f22 to achieve the depth of field needed at this magnification. We used Ektachrome™.

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Vivitar wishes to thank Santa Anita Park and the Los Angeles Turf Club for their assistance on this project





2X Macro-Focusing Teleconverter.

A combination macro-adapter and premium teleconverter designed for use with all high-quality fixed focal length lenses, from 50 to 400mm and telephoto zooms □ Allows user to obtain 1:1 reproduction ratio (life size image on the negative) with any standard 50mm lens □ Extends the macro focusing capabilities of the lens to which it is applied □ Unique 7 element, 5 group optical design

controls optical aberrations and enables user to double lens focal length without image quality loss associated with most teleconverters.

Automatic Tele-Converters.

Doubles or triples the power of your present lenses □ Easy to use—attach the Tele-Converter to your camera; then the lens to the Tele-Converter □ Multicoated optics preserve image quality for high quality results □ Available for most popular 35mm SLR cameras in 1.5X, 2X, 3X and Medium Format.

Vivitar Lensguard™ Cases.

Hard cases survive extreme impact without collapsing or cracking. Removable foam insert allows custom fit and secure cushioning □ Extruded inner tube with bonded end caps provide even more strength, plus protection from moisture. Pouch cases also available.

Filters.

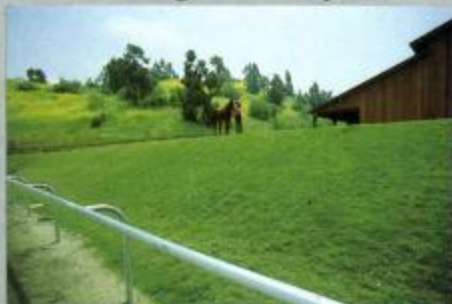
Correct technical problems of lighting, or manipulate light to

exaggerate or suppress color, texture and contrast □ VMC filters are precision made from the highest quality optical glass and polished to plano-parallel flatness. Mounted in metal rings, they can be used in combination or with other lens accessories. Available in many popular styles and sizes.

Close-up Equipment.

Vivitar has everything you need to achieve stunning close-up photography without staggering costs. From screw-on pocket-size close-up lens adapters, to a diaphragm operated +10 Macro adapter, and to the 12mm, 20mm and 36mm extenders of our Extension Tube Set.

Focal length comparison guide



17mm



24mm



28mm



35mm



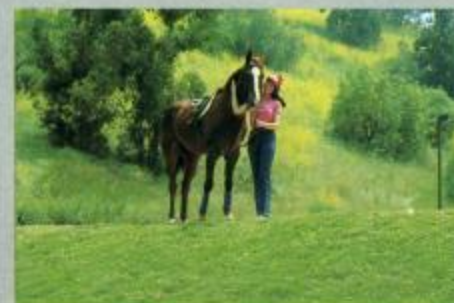
50mm



55mm



70mm



75mm



80mm



85mm



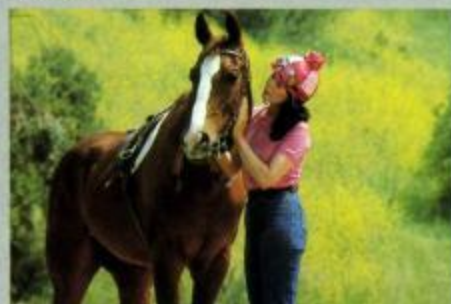
90mm



135mm



150mm



200mm



300mm










400mm

Lens specifications









Series 1® Lenses

		Aperture Range	Optical Construction	Angles of Acceptance	Min. Focusing Distance from Film Plane	Max. Reproduction Ratio	Min. Length	Weight	Max. Barrel Diameter	Lens Coating	Accessory Size
	70-210/f3.5	1/3.5-1/22 (Konica f/16)	14 elements 10 groups	34°-12°	1.2m (47 in.)	1:4	140mm (5.5 in.)	710g (25 oz.)	69.5mm (2.7 in.)	VMC Multi-coated	62mm
	28-90/f2.8-f3.5	1/2.8-1/16 at 28mm 1/3.5-1/22* at 90mm	14 elements 12 groups	75°-27°	230mm (9 in.)**	1:3.3 at 28mm	111.5mm (4.5 in.)	680g (24 oz.)	70mm (2.8 in.)	VMC Multi-coated	67mm


Fixed Focal Length Lenses

	17/f3.5	1/3.5-1/16	11 elements 9 groups	104°	25cm (10 in.)	1:9	50.2mm (2.0 in.)	280g (10 oz.)	70mm (2.8 in.)	Multi-coated	67mm
	24/f2.0 Compact	1/2-1/16	8 elements 8 groups	84°	0.3m (1 ft.)	1:8.8	47mm (1.9 in.)	256g (9 oz.)	64mm (2.5 in.)	Multi-coated	55mm
	28/f2.0 Compact	1/2.0-1/16	8 elements 8 groups	75°	0.3m (1 ft.)	1:7.5	46.7mm (1.8 in.)	245g (8.6 oz.)	64mm (2.5 in.)	Multi-coated	55mm
	28/f2.8 Compact	1/2.8-1/16	7 elements 7 groups	75°	0.3m (1 ft.)	1:7.5	40mm (1.6 in.)	200 (7 oz.)	64mm (2.5 in.)	Multi-coated	49mm
	55/f2.8 Macro	1/2.8-1/16	5 elements 4 groups	43°	21.5cm (8.5 in.)	1:1	64 mm (2.5 in.)	313g (11 oz.)	70mm (2.8 in.)	Multi-coated	62mm
	135/f2.8	1/2.8-1/22	4 elements 4 groups	18°	1.5m (4.9 ft.)	1:9	82mm (3.2 in.)	380g (13.4 oz.)	64mm (2.5 in.)	Multi-coated	52mm
	400/f5.6	1/5.6-1/32	5 elements 5 groups	6°	6.1m (20 ft.)	1:12.2	289mm (11.4 in.)	1.2kg (43 oz.)	83mm (3.3 in.)	Multi-coated	77mm

Zoom Lenses

	28-50/f3.5-4.5	1/3.5-4.5-1/32	9 elements 9 groups	75°-47°	0.6m (2 ft.)	1:11.4	50.5mm (2 in.)	280g (10 oz.)	65.5mm (2.6 in.)	Multi-coated	58mm
	28-85/f2.8-f3.8	1/2.8-1/16 1/3.8-1/22	14 elements 11 groups	74°-29°	25cm (9.8 in.)	1:4	105mm (4.1 in.)	650g (22.9 oz.)	70mm (2.8 in.)	Multi-coated	67mm
	35-70/f2.8-3.8 MF One Touch	1/2.8-1/22 1/3.8-1/32	8 elements 8 groups	63°-34°	0.7m at 35mm (2.5 ft.)	1:4 at 70mm	68.5mm (2.7 in.)	400g (14 oz.)	66.5mm (2.62 in.)	Multi-coated	55mm
	70-150/f3.8† MF One Touch	1/3.8-1/22	13 elements 9 groups	34°-16.5°	0.81m (2.7 ft.)	1:4†††	98mm (3.8 in.)	435g (15.3 oz.)	64mm (2.5 in.)	Multi-coated	52mm
	75-205/f3.8†† MF One Touch	1/3.8-1/22	12 elements 8 groups	32°-12°	1.2m (3.9 ft.)	1:4†††	148mm (5.8 in.)	725g (25.6 oz.)	72mm (2.8 in.)	Multi-coated	62mm
	75-300/f5.6	1/5.6-1/22 (Konica f/16)	13 elements 9 groups	32°-8°20'	560mm (22 in.)	1:5	170mm (6.7 in.)	712g (25 oz.)	67mm (2.6 in.)	Multi-coated	58mm
	80-200/f4.5	1/4.5-1/32	10 elements 7 groups	30°-12°	1.8m (5.9 ft.)	1:7.5	148mm (5.8 in.)	730g (25.6 oz.)	70mm (2.8 in.)	Multi-coated	58mm
	80-200/f4.5 Macro	1/4.5-1/22 (Konica f/16)	12 elements 9 groups	30°-12°40'	400mm (15.7 in.)	1:3 at 80mm	128mm (5 in.)	600g (21 oz.)	63mm (2.5 in.)	Multi-coated	55mm

Macro Teleconverter

	2X Macro Focusing Teleconverter	N/A	7 elements 5 groups	dependent on lens used	dependent on lens used	1:1 (with standard 50mm lens)	44.2mm (1.74 in.)	282g (10 oz.)	66.1mm (2.6 in.)	Multi-coated	N/A
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*effective aperture **in macro †140-300mm with 2x Matched Multiplier ††1150-410mm with 2x Matched Multiplier †††1:2 with 2x Matched Multiplier.
Specifications subject to change without notice. Weight and length may vary slightly depending on the lens mount.

Vivitar

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