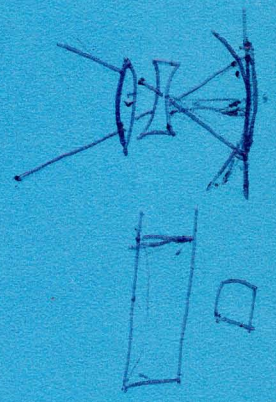


CAMERA 35

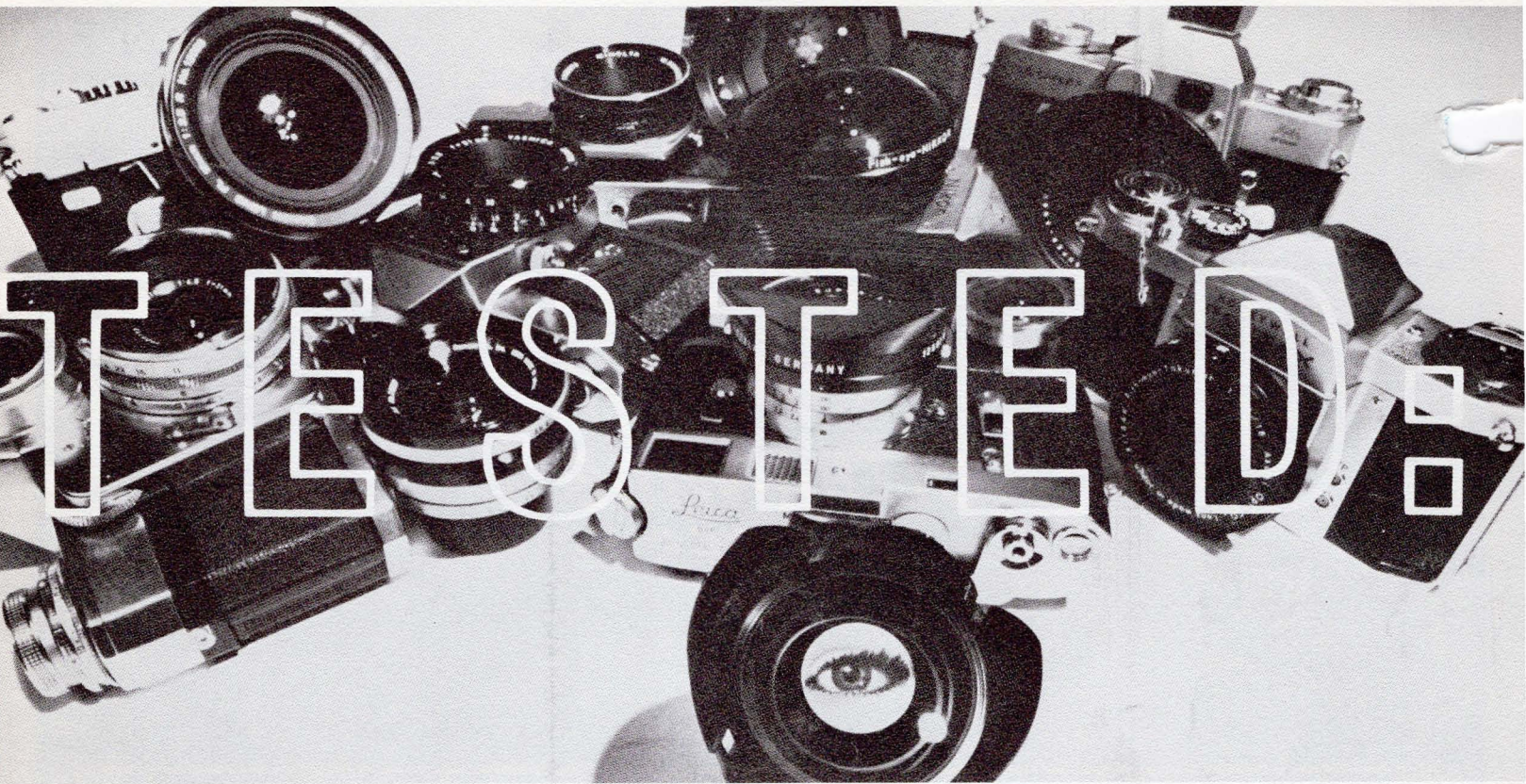
THE MAGAZINE OF MINIATURE PHOTOGRAPHY

tests the
Canon
ULTRA-WIDE
LENSES



DECEMBER 1967/JANUARY 1968 ISSUE





ABOVE, an ultra-wide view of ultra-wide lenses, some loose, some mounted, all fascinating. The eye in foreground does not come with lens.

ULTRA-WIDE LENSES

A guide to a rare breed—and a testament to the fine art of optical engineering.

SINCE the appearance of the first wide-angle lenses, there has been little excuse for backing off a cliff just to get more of that magnificent vista on film. But while lenses of this ilk did provide broader coverage, they also exacted a high price: considerable distortion, painfully obvious vignetting and poor to almost non-existent edge definition.

Considering that the first retrofocus for SLR's, the Angenieux, became a reality in post-war Paris, today's designs represent tremendous strides indeed. Wideangle

lenses in general, and ultra-wides in particular, must do a Herculean job of bending light rays before they reach the film—which guarantees a certain amount of spreading, and thus image dilution. Rare earth glasses and complex optical designs do an impressive job of minimizing this effect. So evaluate these figures with a grain of salt, and bear in mind the fact that a resolution figure that might be only average for a normal lens can be quite impressive for an ultra-wide. And when an ultra-wide hits 80 lines/mm, well, all we can say is, wow!—ME

**BELL & HOWELL/CANON
FL 19mm f/3.5 R**

Lens # 12093

DIAPHRAGM Automatic
DIAPHRAGM RANGE f/3.5 — f/16
FOCUSING RANGE 1.75 ft. — inf.
WEIGHT 7½ oz.
LENGTH 2¾ in.
MAXIMUM DIAMETER 3⅞ in.
FILTER SIZE Series 9
FINISH Black & chrome
PRICE \$279.95

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/3.5	68	56
f/4	80	56
f/5.6	80	56
f/8	80	68
f/11	68	68
f/16	56	56

If I were shopping around for an SLR system, this lens would go a long way toward deciding me on the Canon. Not only is this lens extraordinarily sharp, but you can focus with it . . . a tremendous advantage (for me, at any rate) over lenses that require locking up the mirror and using an optical viewfinder. Another bonus: it can be used either automatically or manually. You just have to be careful that while setting your f/stop you do not accidentally move the nearby automatic-manual ring.

“If I were shopping around for an SLR system— This lens would go a long way toward deciding me on Canon!”

“... This is a lens the Canon people can point to with pride!”

**BELL & HOWELL/CANON
19mm f/3.5**

Lens # 10237

DIAPHRAGM.....Click stops
DIAPHRAGM RANGE.....f/3.5 — f/16
FOCUSING RANGE 2 ft. — Inf.
WEIGHT.....7½ oz.
LENGTH1¼ in.
MAXIMUM DIAMETER.....2¼ in.
FILTER SIZE55mm
FINISH.....Black & chrome
PRICE\$253.95

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/3.5	48	34
f/4	56	40
f/5.6	56	40
f/8	56	48
f/11	48	40
f/16	40	40

Neatly compact and impressively sharp, this lens is for use on rangefinder cameras with the Leica thread mount such as the Canon 7, or older Leicas. With the M adapter, it can also be used on M-series Leicas. This is a natural choice for the 35mm rangefinder photographer who wants a bit more coverage than that offered by the Leitz 21mm Super Angulon lenses. Considering the focal length and speed, this is a lens the Canon people can point to with pride. The mount is nice and hefty, really built to take it.

MINOLTA UW ROKKOR PG 18mm f/9.5

Lens # 1101720

DIAPHRAGM Manual, click stops
DIAPHRAGM RANGE f/9.5 — f/22
FOCUSING RANGE fixed/18" — inf.
WEIGHT 8¼ oz.
LENGTH 1½ in.
MAXIMUM DIAMETER 2½ in.
FILTER SIZE Special
FINISH Black
PRICE \$159.50

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/9.5	24	20
f/11	24	20
f/16	24	20
f/22	40	28

For just \$159.50, Minolta owners can open up a whole new world of exciting photography for themselves with this very unusual 18mm f/9.5 lens. Granted, it is somewhat slow at f/9.5, but its unusual perspective more than makes up for it. Like the Pentax 18mm, this lens has a fixed focus—which means that even at full aperture everything is sharp starting at 18 inches. Also, you view through the lens instead of having to lock up the mirror. If the figures don't impress you, remember that this is a quasi-fisheye. I've seen transparencies made with it that appear quite sharp, indeed.

YASHICA YASHINON DX 21mm f/3.3

Lens # 2130152

DIAPHRAGM Manual, click stops
DIAPHRAGM RANGE f/3.3 — f/16
FOCUSING RANGE 2.5 ft. — inf.
WEIGHT 5 oz.
LENGTH ¾ in.
MAXIMUM DIAMETER 2½ in.
FILTER SIZE 55mm
FINISH Black metal/plastic
PRICE Under \$190

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/3.3	40	28
f/4	40	28
f/5.6	48	40
f/8	40	40
f/11	34	34
f/16	28	28

Not only is this brand new lens the fastest of all the whole 21mm crowd, it also has something else going for it . . . contrast plus sharpness. When you add compactness and its very reasonable price, the total picture is a very impressive one. This is of the mirror lock-up variety, and it can be used on many other SLR cameras besides the Yashica. If you are on the lookout for a 21mm lens with this type of mount, look no further. It is unlikely you will find a better combination. The Yashica engineers should be congratulated!

LEITZ SUPER ANGULON 21mm f/3.4

Lens # 2057491

DIAPHRAGM Click stops
DIAPHRAGM RANGE f/3.4 — f/22
FOCUSING RANGE 16 in. — inf.
WEIGHT 7.3 oz.
LENGTH 1¼ in.
MAXIMUM DIAMETER 2 in.
FILTER SIZE 48mm
FINISH Chrome
PRICE \$270

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/3.4	48	34
f/4	56	40
f/5.6	80	48
f/8	80	56
f/11	80	56
f/16	68	56
f/22	56	40

As if the f/4 Super Angulon weren't good enough, Leitz has improved on the best by making it even better. Not only does this lens offer a bit more speed, it gives better resolution than the older f/4 lens. Needless to say, this lens exhibits the same fine contrast found with all Leitz optics which make these already overwhelmingly sharp lenses seem even sharper. When lenses like this one are tested, it becomes clear why so many professionals use Leicas . . . it is improbable you will find anything better.

KONICA HEXANON 21mm f/4

Lens # 8560827

DIAPHRAGM Automatic
DIAPHRAGM RANGE f/4 — f/16
FOCUSING RANGE 6½ in. — inf.
WEIGHT 13.6 oz.
LENGTH 2¼ in.
MAXIMUM DIAMETER 3¾ in.
FILTER SIZE Series 9
FINISH Chrome/Black Plastic
PRICE \$219.95

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/4	56	28
f/5.6	56	40
f/8	56	40
f/11	68	40
f/16	56	40

Among those who know anything about lenses for 35mm cameras, Hexanon Lenses rate very high indeed. Frankly, it is for basic reasons like this 21mm f/4 lens that Konica enjoys such a fine reputation. Another factor which is very important to some photographers is that in addition to the impressive lens performance, there is fully automatic operation. Don't look down your nose at the Hexanon mount because it is constructed of plastic . . . this helps in making the lens light and convenient to use. There is also an automatic override if you wish to use the lens manually. Obviously, no cutting corners here.

NIKKOR 7.5mm f/5.6 FISHEYE

Lens # 750228

DIAPHRAGM Manual, click stops
DIAPHRAGM RANGE f/5.6 — f/22
FOCUSING RANGE 10 in. — inf.
WEIGHT 10½ oz.
LENGTH 1¾ in.
MAXIMUM DIAMETER 3 in.
FILTER SIZE Built-in
FINISH Black
PRICE \$459.50

RESOLUTION TESTS

APERTURE	CENTER
f/5.6	34
f/8	40
f/11	48
f/16	40
f/22	28

This newer version of the now familiar fisheye is in a class totally by itself, and to be judged properly it must be examined accordingly. As you will certainly note, there are no resolution figures for the edges because the fish-eye is not designed with edge sharpness in mind. This famous special effect lens is used for very special applications and impact . . . a job it does without the slightest question. This newer model looks like the older lens, but there are two very important differences . . . the already incredible angle of view has been broadened even further, and it is a full stop faster.

NIKKOR-O 21mm f/4

Lens # 220839

DIAPHRAGM Manual, click stops
DIAPHRAGM RANGE f/4 — f/16
FOCUSING RANGE 3 ft. — inf.
WEIGHT 5½ oz.
LENGTH 2¼ in.
MAXIMUM DIAMETER 2⅞ in.
FILTER SIZE 52mm
FINISH Black and chrome
PRICE \$199.50

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/4	28	20
f/5.6	40	34
f/8	40	34
f/11	40	40
f/16	56	48

This popular lens has been around for awhile, and in that time it has built a fine reputation for itself. The first thing you realize when you pick it up, attach it to the camera and use it is that this 21mm lens is a nice, compact job. It offers a very solid mount that seems fully capable of taking a lot of punishment. Nikon owners who are reluctant to take the rather steep financial plunge for a fisheye should certainly look into this 21mm as an excellent alternative. Though not as wild as a fisheye, it should provide enough excitement for any photographer. It lives up to the well founded Nikon reputation.

Canon

SINGLE-LENS REFLEX CAMERAS AND ACCESSORIES

MAKE IT EASIER FOR EVERYONE TO SHOOT PROFESSIONAL- TYPE PICTURES!

ZEISS BIOGON 21mm f/4.5

Lens # 2623113

DIAPHRAGM.....Manual, click stops
DIAPHRAGM RANGE.....f/4.5 — f/22
FOCUSING RANGE3 ft. — inf.
WEIGHT10 oz.
LENGTH..... $\frac{3}{4}$ in.
MAXIMUM DIAMETER..... $2\frac{3}{8}$ in.
FILTER SIZE.....Series 6
FINISHChrome
PRICE\$239

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/4.5	20	20
f/5.6	40	28
f/8	40	40
f/11	48	48
f/16	56	56
f/22	48	40

This famous wideangle lens was originally designed for the Zeiss 35mm rangefinder Contax camera, and it is a classic that has earned an excellent reputation. Even though the resolution figures are not as impressive as some newer wideangle lenses, this lens offers good contrast that seems to make up the difference. In addition, as might be expected from Zeiss, the lens is really solidly built. It can only be used on the Contarex, however, and the mirror must be locked up out of the way, since the lens is not a retrofocus.

MINOLTA W. ROKKOR QH 21mm f/4

Lens # 1100874

DIAPHRAGMManual, click stops
DIAPHRAGM RANGEf/4 — f/16
FOCUSING RANGE3 ft. — inf.
WEIGHT $5\frac{1}{2}$ oz.
LENGTH $\frac{5}{8}$ in.
MAXIMUM DIAMETER $2\frac{3}{8}$ in.
FILTER SIZE55mm
FINISHBlack
PRICE\$199.50

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/4	40	28
f/5.6	40	28
f/8	40	40
f/11	40	40
f/16	48	40

This is a nice light lens that can be expected to do a very good job, especially when you consider its reasonable price. To use this lens, you have to lock up the mirror; also, it does not hook up to the automatic exposure operation of the SR-T 101. The mount is made very well, and in operation it is not difficult to see why many pro and amateur photographers alike rely on their Minoltas. It is a good choice if the 18mm Rokkor is too slow for your taste at f/9.5. Definitely a good buy.

CARL ZEISS Jena Flektogon 20mm f/4

Lens # 6893617

DIAPHRAGM...Automatic, click stops
DIAPHRAGM RANGEf/4 — f/22
FOCUSING RANGE.....5 in. — inf.
WEIGHT $11\frac{1}{2}$ oz.
LENGTH $2\frac{3}{8}$ in.
MAXIMUM DIAMETER $3\frac{1}{8}$ in.
FILTER SIZE.....Series 9
FINISH.....Black & chrome
PRICE\$225

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/4	40	40
f/5.6	40	40
f/8	40	56
f/11	48	56
f/16	68	56
f/22	56	56

For many, many years, this East German lens was the widest of the wide angles. Even though this is no longer true, this Flektogon should get serious attention if you are shopping around for a lens in this classification. Just think of the creative possibilities offered by a 20mm lens that focuses down to about five inches. Surprisingly, this lens is not as difficult to focus as I have found some other ultra-wide SLR lenses to be. Made for the Exakta, it can be used automatically on the Miranda with the AXM adapter.

PENTAX FISHEYE-TAKUMAR 18mm f/11

Lens # 811844

DIAPHRAGMManual, click stops
DIAPHRAGM RANGEf/11 — f/32
FOCUSING RANGEFixed focus
WEIGHT $3\frac{1}{2}$ oz.
LENGTH $\frac{1}{2}$ in.
MAXIMUM DIAMETER $2\frac{1}{4}$ in.
FILTER SIZE $2\frac{1}{4}$ in.
FINISHBlack
PRICE\$149.50

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/11	24	12
f/16	34	17
f/22	24	20
f/32	24	17

Even though this lens is officially called a Fish-eye, it does not produce a round image as with the famous Nikkor lens. However, it does everything else. The reason for the seemingly unimpressive resolution figures is also due to its fisheye design. The same performance yardstick for regular lenses should not be applied to these special effect lenses. This is a fun lens, since it is so compact and you can actually look through it to get the full fisheye effect... a control not possible with some similar lenses. Also, since it is manual lens, it can be used, with adapters, on many other SLR cameras.

LEITZ SUPER ANGULON-R 21mm f/3.4

Lens # 2057491

DIAPHRAGMAutomatic
DIAPHRAGM RANGEf/3.4 — f/22
FOCUSING RANGE8 in. — inf.
WEIGHT $9\frac{1}{2}$ oz.
LENGTH1.5 in.
MAXIMUM DIAMETER $3\frac{1}{2}$ in.
FILTER SIZESeries 9
FINISHBlack
PRICE\$303

RESOLUTION TESTS

APERTURE	CENTER	EDGES
f/3.4	80	48
f/4	80	56
f/5.6	80	68
f/8	80	80
f/11	80	68
f/16	80	68
f/22	68	48

It is for reasons such as these resolution figures that make Leicaflex users swear by their cameras. As if these astounding figures were not enough, there is the fantastic German workmanship and unique quality that convinces amateurs and pros alike that the rather steep Leitz prices are well worth it. What's more, even a novice could not help notice the distinctive clarity typical of all Leica and Leicaflex negatives. Under the microscope, the sharpness seems to jump right out at you. Incredibly is the best description here.

There are a total of 23 breech-lock mount Canon FL lenses designed especially for the Canon FP, FX, FT-QL, Pellix, and Pellix QL cameras. Ranging from 19mm super wide-angle to 1000mm super telephoto, the lenses feature exceptional optical and mechanical quality. Here is a complete listing:

Catalog No.	Description	Suggested List Price	Catalog No.	Description	Suggested List Price
112245	19mm f/3.5R Wide-Angle Lens with Case and Filter Holder	\$279.95	112175	100mm f/3.5 Telephoto Lens with Case and Lens Hood	\$ 99.95
112159	28mm f/3.5 Wide-Angle Lens with Case and Lens Hood	174.40	112188	135mm f/3.5 Telephoto Lens with Case and Lens Hood	109.95
112155	35mm f/2.5 Wide-Angle Lens with Case and Lens Hood	124.95	112185	135mm f/2.5 Telephoto Lens with Case and Lens Hood	144.50
112154	38mm f/2.8 Wide-Angle Lens (for Pellix and Pellix QL only) with Case	94.95	112191	200mm f/4.5 Telephoto Lens with Case (Lens Hood Built-In)	129.95
112169	50mm f/3.5 Macro Lens with Life-Size (1:1) Adapter and Case	169.95	112195	200mm f/3.5 Telephoto Lens with Case (Lens Hood Built-In)	175.50
112102	50mm f/1.8 Normal Lens	76.00	112130	300mm f/4 Telephoto Lens with Case and Intermediate Tube (Hood Built-In)	321.00
112149	50mm f/1.4 Normal Lens	126.00	112140	400mm f/4.5 Telephoto Lens with Case and Intermediate Tube (Hood Built-In)	471.00
112101	58mm f/1.2 Normal Lens	161.00	112160	600mm f/5.6 Telephoto Lens with Case and Intermediate Tube (Hood Built-In)	550.00
112126	55 → 135mm f/3.5 Zoom Lens with Case and Lens Hood	299.50	112180	800mm f/8 Telephoto Lens with Case and Intermediate Tube (Hood Built-In)	650.00
112179	100 → 200mm f/5.6 Zoom Lens with Case (Lens Hood Built-In)	209.95	112190	1000mm f/11 Telephoto Lens with Case and Intermediate Tube (Hood Built-In)	750.00
112200	85 → 300mm f/5 Zoom Lens with Case (Lens Hood Built-In)	578.50			
112165	85mm f/1.8 Telephoto Lens with Case and Lens Hood	149.95			

A complete line of accessories is available for Canon single-lens reflex cameras. For complete information on the complete Canon line of fine photographic equipment, write to the Bell & Howell Customer Relations Department at the address below.

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The article "ULTRA-WIDE LENSES" is reprinted through the courtesy of CAMERA 35 magazine, published by U.S. Camera Publishing Corporation, 9 East 40th Street, New York, New York 10016.

