

# modern tests

the picture area. On slides, slight tangential astigmatic streaking was observable wide open, but it disappeared at f/2.8, leading us to conclude that astigmatism was very well-corrected. Coma appeared well-controlled at all apertures.

Like any camera, the Konica Auto S3 is the result of a limited number of design objectives and a greater number of design compromises. By keeping their fast-lensed compact as compact and simple as possible (aside from the intriguing and successful autoflash-fill system) and fitting it with a first-rate lens, they've created a workable, portable package that should appeal to many photographers in search of a "vacation" or "grab shooting" camera which offers considerably more flexibility than a straight "automatic only" 35. And if we technical testers sometimes yearn for auto parallax compensation and even interchangeable lenses in a similarly-sized package, we know that we can get it (in the Leica CL). But only by paying three times the Auto S3's already ample price.

The family resemblance of all three C/D lenses is strong: bright black satin finish; diamond-studded, rubberized-grip focusing rings; extremely legible green

high speed with minimum size and weight. And while these three C/D Soligors may not be the fastest lenses in town in each focal length, they certainly combine speed and compactness plus optical quality in a manner unmatched by others.

Since we have been baring the true manufacturers of prestige independent brand optics, we should point out that these C/D Soligors are the products of Tokina, formerly Tokyo Koki, of T4 interchangeable lens-mount fame, aided by the fine hand of the U.S. importer, Allied Impex Corp., purveyors of the Soligor brand lenses. And without casting any aspersions on T4 optics, there is a difference in the look and feel of these.

Three C/D lenses is strong: bright black satin finish; diamond-studded, rubberized-grip focusing rings; extremely legible green

## Resolution Power

28mm f/2 Soligor C/D No. 17402426 At 1:48 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
2	Exc.	54	Accept.	24
2.8	Exc.	60	Accept.	24
4	Exc.	68	Accept.	30
5.6	Exc.	76	Good	34
8	Exc.	68	Exc.	43
11	Exc.	60	V/Good	38
16	Exc.	60	V/Good	38
Actual Focal Length 28.8mm				

## Image Contrast

28mm f/2 Soligor C/D No. 17402426 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
2	Low	38	High	32
2.8	Low	46	High	36
4	Low	57	Low	39
5.6	Low	59	Low	41
8	Low	58	Low	38
11	Medium	57	Medium	35
16	Low	50	Low	33

## SOLIGOR C/D: NEW NAME IN QUALITY LENSES

**MANUFACTURER'S SPECIFICATIONS:** 28mm f/2 Soligor C/D for Nikon, Canon, Pentax, Minolta and cameras with similar mounts. **FEATURES:** Apertures to f/16, focusing to 9 in. (0.23m), accepts 58mm accessories. **PRICE:** \$249.50.

**135mm f/2 Soligor C/D in mounts as above. FEATURES:** Apertures to f/22, focusing to 5.9 ft. (1.8m), built-in collapsible lens hood, accepts 77mm accessories. **PRICE:** \$279.50.

**200mm f/2.8 Soligor C/D in mounts as above. FEATURES:** Apertures to f/22, focusing to 7.2 ft. (2.2m), built-in collapsible lens hood, accepts 77mm accessories. **PRICE:** \$324.50.

The time is now well past when an independent lens maker's name on an optic only indicated a buyer's thrifty nature. While most independent lens makers still do provide a standard lens line of thrifty buys (in which features of the camera manufacturer's own brand of lenses are nearly duplicated, item by item), the top independents have gone beyond that with their own series of prestige lenses. However, the word prestige, coupled with obviously top-notch physical construction, would certainly not be enough to woo buyers (at the prices asked) unless there were extra inducements. In most of the Soligor C/D lenses, the name of the game is

footage and white meter markings (although we U.S. chauvinists would have preferred it the other way 'round); click half-stops throughout except between the next-to-last and last f/stop. And, as befits prestige lenses, each is multicoated.

Starting with the 28mm f/2, we find it to be a fairly weighty lens (11.65 oz., or 330g), which isn't too surprising since it uses eight elements to achieve its remarkable speed. However, in size it's only 2.5 in. (6.35cm) in diameter and 2.2 in. (5.9cm) long. It focuses to its minimum distance in a smooth 270° turn of the focusing ring. Here's how it performed in our optical bench and test slide analyses.

**Central image quality:** Central color fringing was very well-controlled at all apertures. Central spherical aberration produced rather large flare at f/2 on the bench; it was substantially re-

duced by f/2.8 and gone by f/4. However, in our pictures, this aberration was barely detectable. **Edge image quality:** Lateral color fringing appeared better controlled on the bench than in the pictures taken, although it never exceeded acceptable limits. Astigmatism, rather large wide open both on the bench and in pictures, quickly came under control as we stopped down the lens. In both pictures and on the bench, coma was judged to be causing substantial flare at full aperture. As we stopped down, comatic flare was reduced, and by f/5.6 it was almost gone.

While residual ghosts and flare were strong wide open, flare did disappear as we stopped down, although ghosts remained. In short, this optic offers just the performance one might expect from a very large aperture wide-angle lens. The speed is there when you need it, but you will generally get better results at smaller apertures.

Turning now to the 135mm f/2 lens, we have a very impressive-looking piece of glass—six elements with a length of 4.9 in. (12.4cm) and diameter of 3.3 in. (8.3cm), but with a relatively light weight of 26 oz. (737g). Most important, however, is the really superb hand-holding balance of the lens, which allows the inch-wide focusing ring to be handled conveniently. Its closest focusing distance, obtained in a smooth 270° turn of the focusing collar, permits head-and-shoulders portraits. Here's what our lab and picture analysis revealed.

**Central image quality:** We found rather large red fringing at f/2, which swiftly came under control as we stopped down. Central spherical aberration proved rather strong wide open in both pictures and on the bench, but

## Resolution Power

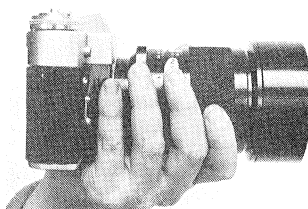
135mm f/2 Soligor C/D No. 17402168 At 1:50 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
2	Accept.	35	V/Good	32
2.8	Exc.	50	V/Good	32
4	V/Good	50	Good	35
5.6	Exc.	56	Exc.	45
8	Exc.	56	Exc.	50
11	Exc.	56	Exc.	45
16	Exc.	56	Exc.	45
22	Exc.	50	V/Good	35
Actual Focal Length: 135.3mm				

## Image Contrast

135mm f/2 Soligor C/D No. 17402168 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
2	Low	37	High	43
2.8	Medium	52	High	44
4	Medium	58	Medium	47
5.6	Medium	65	High	51
8	Medium	67	Medium	47
11	High	64	Medium	47
16	Medium	59	Medium	44
22	Medium	52	Low	40

was under control by f/4 to f/5.6. A double-line effect was visible in out-of-focus images that were shot at full aperture. **Edge image quality:** Lateral color fringing was large but acceptable in our picture analysis, but looked even better on the bench. Astigmatism appeared well-controlled, being moderate in the corners wide open but almost invisible by f/5.6. We judged coma to be quite well-corrected. On our slides, comatic flare was substantial at f/2, but became minimal at smaller apertures.

Coming at last to the longest lens of the trio, we have again a faster-than-usual optic for this focal length at a moderate size and weight—this C/D lens being some 4.8 in. (12.4cm) long and 3.3 in. (8.4cm) in diameter, and weighing 27 oz. (766g). Again there are six elements. It handles every bit as well as (or perhaps even better than) the 135mm, and provides a tighter head-only focus at minimum distance in a smooth 300° turn of the focusing collar. The 200mm, like the 135mm, has a very good collapsible lens hood. However, unlike the 135mm lens, we were not able



**A 200mm lens doesn't have to be as big as a stovepipe—even if it's f/2.8. Small Soligor is nicely balanced for hand-holding.**

to erect the hood when a filter was threaded into the lens. In such cases, an accessory lens hood is necessary. In our field and bench tests we found the following:

**Central image quality:** Both color fringing and flare, caused respectively by central chromatic aberration and spherical aberration, were rather large at f/2.8 but became well-controlled at one stop smaller—in pictures and on the bench.

**Edge image quality:** Lateral color fringing appeared moderate on the bench and was judged to be well-controlled in pictures. Astigmatism, which appeared moderately large on the bench, was judged to be very well-controlled in practical picture taking. Coma was rather prominent at f/2.8 and f/4 on the bench and in our pictures, but it was well-controlled by f/5.6.

These three lens designs, then, do not provide incredible breakthroughs in optical design (which no other makes have, either). What they do offer are remarkably good performances throughout each range, partic-

## Resolution Power

200mm f/2.8 Soligor C/D No. 17400627 At 1:51 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
2.8	V/Good	45	Exc.	40
4	Exc.	51	Exc.	45
5.6	V/Good	51	Exc.	45
8	Good	45	Exc.	40
11	V/Good	45	Exc.	40
16	Exc.	51	V/Good	36
22	V/Good	45	Good	32
Actual Focal Length: 196.3mm				

## Image Contrast

200mm f/2.8 Soligor C/D No. 17400627 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
2.8	V/Low	19	Low	29
4	Low	30	Low	34
5.6	Low	38	Low	36
8	Low	42	Low	33
11	Low	43	V/Low	29
16	Low	43	V/Low	27
22	Low	38	V/Low	24

ularly when their unusually large maximum apertures are taken into account. That this has been accomplished in so compact and handy a fashion is a credit to the designers and fabricators.

## TRIO OF ROKKOR-X AND CELTIC 200MM LENSES

**MANUFACTURER'S SPECIFICATIONS:** 200 f/3.5 MC Tele Rokkor-X QF lens in bayonet mount for Minolta cameras. **FEATURES:** Apertures to f/22, focusing to 8 ft. (2.5m), built-in collapsible lens hood, accepts 62mm accessories. **PRICE:** \$274.

**200mm f/4.5 MC Tele Rokkor-X PE lens in bayonet mount for Minolta cameras. FEATURES:** Apertures to f/22, focusing to 8 ft. (2.5m), built-in collapsible lens hood, accepts 55mm accessories. **PRICE:** \$193.

**200mm f/4 MC Minolta Celtic lens in bayonet mount for Minolta cameras. FEATURES:** Apertures to f/22, focusing to 8 ft. (2.5m), accepts 55mm accessories. **PRICE:** \$135.

In our continuing efforts to provide thorough coverage of new Minolta lenses, we've climbed to the 200mm level in this fourth installment. Since our trio of test subjects includes two Rokkor-X's and one Celtic of the same focal length, you may be

asking the same question we did at first: Why? A quick comparison turns up some immediate functional differences.

The big daddy f/3.5 Rokkor-X is naturally more rotund than the f/4.5 Rokkor-X because of the extra glass necessary to give you that extra speed of nearly one stop. It has six elements in four groups, and its weight of 1 lb. 11 oz. (877g) is a good 8 oz. (227g) more than the f/4.5 Rokkor-X, which has five elements in five groups. In spite of the extra weight, the dimensions of the faster lens are not that much greater: 3.0 in. (76mm) in diameter and 5.5 in. (140mm) long, as opposed to 2.6 in. (66mm) in diameter and 5.2 in. (132mm) in length.

What about the Celtic? Standing side by side with the f/4.5 Rokkor-X, this younger and faster (f/4) cousin with six elements in five groups matches up in length and diameter, but is 2 oz. (57g) heavier, weighing in at 1 lb. 5 1/4 oz. (603g). The additional weight lies more toward the rear and seems to balance out better when quickly hefting the lens/camera combination for grab shooting. Focusing, however, may seem a bit more sluggish—though no less smooth—than on the Rokkors. Speaking of focusing, both Rokkors go from infinity to their closest focusing distance of 8 ft. (2.5m) in a 270° turn, while the Celtic requires a 330° turn to get to the same minimum focus. Another difference is that both Rokkors have built-in collapsible lens hoods, while the Celtic isn't provided with one.

The most meaningful differences in handling—as with other groups of lenses with the same focal length but varying f/stops—are displayed right in the viewfinder when actually shooting. We're talking about brightness while focusing, especially the delineation of microprism focusing such as that on our SR-T 102 test camera. The brightest 200mm in the group is unquestionably the f/3.5 Rokkor-X. When the eye is centered in the viewfinder, the microprism collar snaps cleanly in and out of focus. With the f/4 Celtic in place on our camera, we had to take more care in centering our eye, and even more so with the f/4.5 Rokkor-X, if we insisted on focusing with the microprism collar. Of course, since

the Minolta cameras also feature split-image focusing within the collar, snap-focusing on vertical lines can be accomplished with ease by using it.

Since we went into considerable detail regarding the general finish and construction of Rokkor-X's vs. Celtics in last month's report on the 135mm lenses (see "Modern Tests," April 1975, pg. 116), we'll simply note that careful examination and field testing of the 200mm's confirms last month's conclusions. The Rokkor-X's are as finely made as any lens system we've tested, while the Celtics are quite nicely made and are more than adequate for heavy amateur use.

Now let's see how the three lenses shaped up in our optical bench and test slide analysis. First, the 200mm f/3.5 Rokkor-X: **Central image quality:** Central color fringing appeared quite well-controlled wide open and was eliminated by f/8. Central spherical aberration was judged to be even better corrected, and the slight flare visible at f/3.5 was

## Resolution Power

200mm f/3.5 Rokkor-X No. 5716206 At 1:50 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
3.5	V/Good	45	Exc.	35
5.6	V/Good	45	Exc.	35
8	Good	45	Good	32
11	Accept.	32	Accept.	28
16	Accept.	35	Good	32
22	Accept.	35	Good	32
Actual Focal Length: 200.4mm				

## Image Contrast

200mm f/3.5 Rokkor-X No. 5716206 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
3.5	Low	41	Medium	37
5.6	High	64	Medium	37
8	Medium	66	Medium	41
11	High	65	Low	39
16	High	62	Low	35
22	Medium	48	V/Low	29

almost gone at f/5.6. Some decentering was observed on the bench, leading to slight astigmatism at the center at f/5.6 and wider, but we couldn't detect this in actual picture taking.

**Edge image quality:** Lateral color fringing appeared very well-controlled, and wasn't disturbing even in the extreme corners. Both on the bench and in actual picture taking, we found astigmatism and coma to be excellently corrected. On our slides, astigmatism was not visible, and only slight comatic flare was seen.

Now let's examine the second Rokkor-X, the 200mm f/4.5: **Central image quality:** Central color fringing was well-controlled, but not quite as effectively as in the f/3.5 Rokkor-X. Correction for central spherical aberration was up to the high standard of the f/3.5 optic.

## Resolution Power

200mm f/4.5 Rokkor-X No. 1716156 At 1:50 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
4.5	Good	40	V/Good	32
5.6	Good	40	V/Good	32
8	Accept.	35	Good	32
11	Accept.	35	Accept.	28
16	Accept.	32	Accept.	28
22	Accept.	32	Accept.	28
Actual Focal Length: 201.5mm				

## Image Contrast

200mm f/4.5 Rokkor-X No. 1716156 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
4.5	Low	39	Medium	31
5.6	Low	44	Low	33
8	Medium	56	Low	33
11	Medium	59	V/Low	29
16	Medium	53	V/Low	27
22	Low	44	V/Low	29

## Resolution Power

200mm f/4 Minolta Celtic No. 1017623 At 1:50 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
4	Accept.	35	Exc.	35
5.6	Accept.	35	V/Good	32
8	Accept.	32	Good	32
11	Accept.	35	Good	32
16	Accept.	32	Accept.	28
22	Accept.	32	Accept.	28
Actual Focal Length: 201.6mm				

## Image Contrast

200mm f/4 Minolta Celtic No. 1017623 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
4	Medium	46	High	43
5.6	Medium	53	High	45
8	Medium	62	Medium	49
11	High	60	Medium	46
16	Medium	52	Low	40
22	Low	43	Low	35

**Edge image quality:** Lateral color was well-corrected, but again not quite on the level of the f/3.5 Rokkor. Astigmatism was extremely well-controlled, as in the faster lens, and coma appeared to be even better corrected, particularly on our test slides.

Finally, here's what we found out about the f/4 Celtic: **Central image quality:** Central color fringing was moderately large wide open, but was almost gone at f/8. Spherical aberration appeared well-corrected, and was scarcely visible on our slides. **Edge image quality:** Compact, but rather bright, lateral color fringes were seen on our test slides; but since sharpness wasn't affected, we judged lateral color correction to be good. In both bench and slide analyses, astigmatism was almost invisible. On the bench, comatic flare was noticeable at f/4; it disappeared at f/8. Coma was less prominent in our slides.—THE END

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